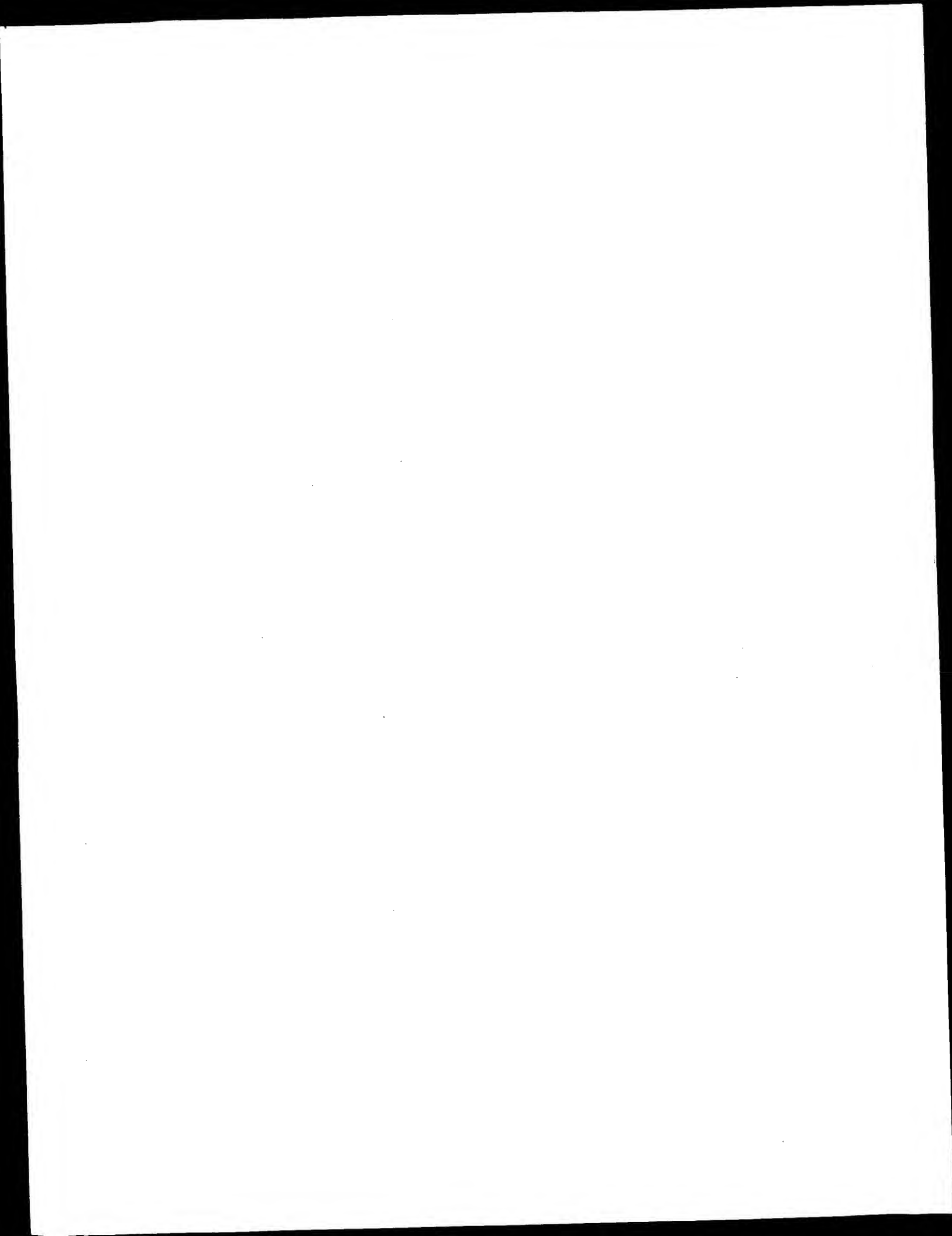




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(54) Title: COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF PROSTATE CANCER			
(57) Abstract			

Compositions and methods for the therapy and diagnosis of cancer, comprising one or more prostate tumor proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell or cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as prostate cancer. Diagnostic methods based on detecting a prostate tumor protein, or mRNA encoding such a protein, in a sample are also provided.



COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF PROSTATE CANCER

TECHNICAL FIELD

The present invention relates generally to therapy and diagnosis of cancer, such as prostate cancer. The invention is more specifically related to polypeptides comprising at least a portion of a prostate tumor protein, and to polynucleotides encoding such polypeptides. Such polypeptides and polynucleotides may be used in vaccines and pharmaceutical compositions for prevention and treatment of prostate cancer, and for the diagnosis and monitoring of such cancers.

BACKGROUND OF THE INVENTION

Prostate cancer is the most common form of cancer among males, with an estimated incidence of 30% in men over the age of 50. Overwhelming clinical evidence shows that human prostate cancer has the propensity to metastasize to bone, and the disease appears to progress inevitably from androgen dependent to androgen refractory status, leading to increased patient mortality. This prevalent disease is currently the second leading cause of cancer death among men in the U.S.

In spite of considerable research into therapies for the disease, prostate cancer remains difficult to treat. Commonly, treatment is based on surgery and/or radiation therapy, but these methods are ineffective in a significant percentage of cases. Two previously identified prostate specific proteins - prostate specific antigen (PSA) and prostatic acid phosphatase (PAP) - have limited therapeutic and diagnostic potential. For example, PSA levels do not always correlate well with the presence of prostate cancer, being positive in a percentage of non-prostate cancer cases, including benign prostatic hyperplasia (BPH). Furthermore, PSA measurements correlate with prostate volume, and do not indicate the level of metastasis.

In spite of considerable research into therapies for these and other cancers, prostate cancer remains difficult to diagnose and treat effectively. Accordingly, there is a need in the art for improved methods for detecting and treating such cancers. The present invention fulfills these needs and further provides other related advantages.

SUMMARY OF THE INVENTION

Briefly stated, the present invention provides compositions and methods for the diagnosis and therapy of cancer, such as prostate cancer. In one aspect, the present

invention provides polypeptides comprising at least a portion of a prostate tumor protein, or a variant thereof. Certain portions and other variants are immunogenic, such that the ability of the variant to react with antigen-specific antisera is not substantially diminished. Within certain embodiments, the polypeptide comprises at least an immunogenic portion of a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of: (a) sequences recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; (b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and (c) complements of any of the sequence of (a) or (b). In certain specific embodiments, such a polypeptide comprises at least a portion, or variant thereof, of a tumor protein that includes an amino acid sequence selected from the group consisting of sequences recited in any one of SEQ ID NO: 112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380 and 383.

The present invention further provides polynucleotides that encode a polypeptide as described above, or a portion thereof (such as a portion encoding at least 15 amino acid residues of a prostate tumor protein), expression vectors comprising such polynucleotides and host cells transformed or transfected with such expression vectors.

Within other aspects, the present invention provides pharmaceutical compositions comprising a polypeptide or polynucleotide as described above and a physiologically acceptable carrier.

Within a related aspect of the present invention, vaccines are provided. Such vaccines comprise a polypeptide or polynucleotide as described above and a non-specific immune response enhancer.

The present invention further provides pharmaceutical compositions that comprise: (a) an antibody or antigen-binding fragment thereof that specifically binds to a prostate tumor protein; and (b) a physiologically acceptable carrier.

Within further aspects, the present invention provides pharmaceutical compositions comprising: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a pharmaceutically acceptable carrier or excipient. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B cells.

Within related aspects, vaccines are provided that comprise: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a non-specific immune response enhancer.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides encoding such fusion proteins.

Within related aspects, pharmaceutical compositions comprising a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a physiologically acceptable carrier are provided.

Vaccines are further provided, within other aspects, that comprise a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a non-specific immune response enhancer.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or vaccine as recited above.

The present invention further provides, within other aspects, methods for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate tumor protein, wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the protein from the sample.

Within related aspects, methods are provided for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated as described above.

Methods are further provided, within other aspects, for stimulating and/or expanding T cells specific for a prostate tumor protein, comprising contacting T cells with one or more of: (i) a polypeptide as described above; (ii) a polynucleotide encoding such a polypeptide; and/or (iii) an antigen presenting cell that expresses such a polypeptide; under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells. Isolated T cell populations comprising T cells prepared as described above are also provided.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population as described above.

The present invention further provides methods for inhibiting the development of a cancer in a patient, comprising the steps of: (a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with one or more of: (i) a polypeptide comprising at least an immunogenic portion of a prostate tumor protein; (ii) a polynucleotide encoding such a polypeptide; and (iii) an antigen-presenting cell that expressed such a polypeptide; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient. Proliferated cells may, but need not, be cloned prior to administration to the patient.

Within further aspects, the present invention provides methods for determining the presence or absence of a cancer in a patient, comprising: (a) contacting a biological sample obtained from a patient with a binding agent that binds to a polypeptide as recited

above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and (c) comparing the amount of polypeptide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within preferred embodiments, the binding agent is an antibody, more preferably a monoclonal antibody. The cancer may be prostate cancer.

The present invention also provides, within other aspects, methods for monitoring the progression of a cancer in a patient. Such methods comprise the steps of: (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polypeptide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

The present invention further provides, within other aspects, methods for determining the presence or absence of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein; (b) detecting in the sample a level of a polynucleotide, preferably mRNA, that hybridizes to the oligonucleotide; and (c) comparing the level of polynucleotide that hybridizes to the oligonucleotide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within certain embodiments, the amount of mRNA is detected via polymerase chain reaction using, for example, at least one oligonucleotide primer that hybridizes to a polynucleotide encoding a polypeptide as recited above, or a complement of such a polynucleotide. Within other embodiments, the amount of mRNA is detected using a hybridization technique, employing an oligonucleotide probe that hybridizes to a polynucleotide that encodes a polypeptide as recited above, or a complement of such a polynucleotide.

In related aspects, methods are provided for monitoring the progression of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein; (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polynucleotide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

Within further aspects, the present invention provides antibodies, such as monoclonal antibodies, that bind to a polypeptide as described above, as well as diagnostic

kits comprising such antibodies. Diagnostic kits comprising one or more oligonucleotide probes or primers as described above are also provided.

These and other aspects of the present invention will become apparent upon reference to the following detailed description and attached drawings. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

BRIEF DESCRIPTION OF THE DRAWINGS AND SEQUENCE IDENTIFIERS

Figure 1 illustrates the ability of T cells to kill fibroblasts expressing the representative prostate tumor polypeptide P502S, as compared to control fibroblasts. The percentage lysis is shown as a series of effector:target ratios, as indicated.

Figures 2A and 2B illustrate the ability of T cells to recognize cells expressing the representative prostate tumor polypeptide P502S. In each case, the number of γ -interferon spots is shown for different numbers of responders. In Figure 2A, data is presented for fibroblasts pulsed with the P2S-12 peptide, as compared to fibroblasts pulsed with a control E75 peptide. In Figure 2B, data is presented for fibroblasts expressing P502S, as compared to fibroblasts expressing HER-2/*neu*.

Figure 3 represents a peptide competition binding assay showing that the P1S#10 peptide, derived from P501S, binds HLA-A2. Peptide P1S#10 inhibits HLA-A2 restricted presentation of fluM58 peptide to CTL clone D150M58 in TNF release bioassay. D150M58 CTL is specific for the HLA-A2 binding influenza matrix peptide fluM58.

Figure 4 illustrates the ability of T cell lines generated from P1S#10 immunized mice to specifically lyse P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat A2Kb targets, as compared to EGFP-transduced Jurkat A2Kb. The percent lysis is shown as a series of effector to target ratios, as indicated.

Figure 5 illustrates the ability of a T cell clone to recognize and specifically lyse Jurkat A2Kb cells expressing the representative prostate tumor polypeptide P501S, thereby demonstrating that the P1S#10 peptide may be a naturally processed epitope of the P501S polypeptide.

Figures 6A and 6B are graphs illustrating the specificity of a CD8⁺ cell line (3A-1) for a representative prostate tumor antigen (P501S). Figure 6A shows the results of a ⁵¹Cr release assay. The percent specific lysis is shown as a series of effector:target ratios, as indicated. Figure 6B shows the production of interferon-gamma by 3A-1 cells stimulated with autologous B-LCL transduced with P501S, at varying effector:target ratios as indicated.

SEQ ID NO: 1 is the determined cDNA sequence for F1-13

SEQ ID NO: 2 is the determined 3' cDNA sequence for F1-12

SEQ ID NO: 3 is the determined 5' cDNA sequence for F1-12
SEQ ID NO: 4 is the determined 3' cDNA sequence for F1-16
SEQ ID NO: 5 is the determined 3' cDNA sequence for H1-1
SEQ ID NO: 6 is the determined 3' cDNA sequence for H1-9
SEQ ID NO: 7 is the determined 3' cDNA sequence for H1-4
SEQ ID NO: 8 is the determined 3' cDNA sequence for J1-17
SEQ ID NO: 9 is the determined 5' cDNA sequence for J1-17
SEQ ID NO: 10 is the determined 3' cDNA sequence for L1-12
SEQ ID NO: 11 is the determined 5' cDNA sequence for L1-12
SEQ ID NO: 12 is the determined 3' cDNA sequence for N1-1862
SEQ ID NO: 13 is the determined 5' cDNA sequence for N1-1862
SEQ ID NO: 14 is the determined 3' cDNA sequence for J1-13
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SEQ ID NO: 38 is the determined 3' cDNA sequence for N1-1860
SEQ ID NO: 39 is the determined 3' cDNA sequence for N1-1861

SEQ ID NO: 40 is the determined 3' cDNA sequence for N1-1864
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SEQ ID NO: 108 is the predicted amino acid sequence for F1-12
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SEQ ID NO: 253 is the determined cDNA sequence for JPTPN86
SEQ ID NO: 254 is the determined cDNA sequence for JPTPN87
SEQ ID NO: 255 is the determined cDNA sequence for JPTPN88
SEQ ID NO: 256 is the determined cDNA sequence for JP1F1
SEQ ID NO: 257 is the determined cDNA sequence for JP1F2
SEQ ID NO: 258 is the determined cDNA sequence for JP1C2
SEQ ID NO: 259 is the determined cDNA sequence for JP1B1
SEQ ID NO: 260 is the determined cDNA sequence for JP1B2

SEQ ID NO: 261 is the determined cDNA sequence for JP1D3
SEQ ID NO: 262 is the determined cDNA sequence for JP1A4
SEQ ID NO: 263 is the determined cDNA sequence for JP1F5
SEQ ID NO: 264 is the determined cDNA sequence for JP1E6
SEQ ID NO: 265 is the determined cDNA sequence for JP1D6
SEQ ID NO: 266 is the determined cDNA sequence for JP1B5
SEQ ID NO: 267 is the determined cDNA sequence for JP1A6
SEQ ID NO: 268 is the determined cDNA sequence for JP1E8
SEQ ID NO: 269 is the determined cDNA sequence for JP1D7
SEQ ID NO: 270 is the determined cDNA sequence for JP1D9
SEQ ID NO: 271 is the determined cDNA sequence for JP1C10
SEQ ID NO: 272 is the determined cDNA sequence for JP1A9
SEQ ID NO: 273 is the determined cDNA sequence for JP1F12
SEQ ID NO: 274 is the determined cDNA sequence for JP1E12
SEQ ID NO: 275 is the determined cDNA sequence for JP1D11
SEQ ID NO: 276 is the determined cDNA sequence for JP1C11
SEQ ID NO: 277 is the determined cDNA sequence for JP1C12
SEQ ID NO: 278 is the determined cDNA sequence for JP1B12
SEQ ID NO: 279 is the determined cDNA sequence for JP1A12
SEQ ID NO: 280 is the determined cDNA sequence for JP8G2
SEQ ID NO: 281 is the determined cDNA sequence for JP8H1
SEQ ID NO: 282 is the determined cDNA sequence for JP8H2
SEQ ID NO: 283 is the determined cDNA sequence for JP8A3
SEQ ID NO: 284 is the determined cDNA sequence for JP8A4
SEQ ID NO: 285 is the determined cDNA sequence for JP8C3
SEQ ID NO: 286 is the determined cDNA sequence for JP8G4
SEQ ID NO: 287 is the determined cDNA sequence for JP8B6
SEQ ID NO: 288 is the determined cDNA sequence for JP8D6
SEQ ID NO: 289 is the determined cDNA sequence for JP8F5
SEQ ID NO: 290 is the determined cDNA sequence for JP8A8
SEQ ID NO: 291 is the determined cDNA sequence for JP8C7
SEQ ID NO: 292 is the determined cDNA sequence for JP8D7
SEQ ID NO: 293 is the determined cDNA sequence for P8D8
SEQ ID NO: 294 is the determined cDNA sequence for JP8E7
SEQ ID NO: 295 is the determined cDNA sequence for JP8F8
SEQ ID NO: 296 is the determined cDNA sequence for JP8G8
SEQ ID NO: 297 is the determined cDNA sequence for JP8B10

SEQ ID NO: 298 is the determined cDNA sequence for JP8C10
SEQ ID NO: 299 is the determined cDNA sequence for JP8E9
SEQ ID NO: 300 is the determined cDNA sequence for JP8E10
SEQ ID NO: 301 is the determined cDNA sequence for JP8F9
SEQ ID NO: 302 is the determined cDNA sequence for JP8H9
SEQ ID NO: 303 is the determined cDNA sequence for JP8C12
SEQ ID NO: 304 is the determined cDNA sequence for JP8E11
SEQ ID NO: 305 is the determined cDNA sequence for JP8E12
SEQ ID NO: 306 is the amino acid sequence for the peptide PS2#12
SEQ ID NO: 307 is the determined cDNA sequence for P711P
SEQ ID NO: 308 is the determined cDNA sequence for P712P
SEQ ID NO: 309 is the determined cDNA sequence for CLONE23
SEQ ID NO: 310 is the determined cDNA sequence for P774P
SEQ ID NO: 311 is the determined cDNA sequence for P775P
SEQ ID NO: 312 is the determined cDNA sequence for P715P
SEQ ID NO: 313 is the determined cDNA sequence for P710P
SEQ ID NO: 314 is the determined cDNA sequence for P767P
SEQ ID NO: 315 is the determined cDNA sequence for P768P
SEQ ID NO: 316-325 are the determined cDNA sequences of previously isolated genes
SEQ ID NO: 326 is the determined cDNA sequence for P703PDE5
SEQ ID NO: 327 is the predicted amino acid sequence for P703PDE5
SEQ ID NO: 328 is the determined cDNA sequence for P703P6.26
SEQ ID NO: 329 is the predicted amino acid sequence for P703P6.26
SEQ ID NO: 330 is the determined cDNA sequence for P703PX-23
SEQ ID NO: 331 is the predicted amino acid sequence for P703PX-23
SEQ ID NO: 332 is the determined full length cDNA sequence for P509S
SEQ ID NO: 333 is the determined extended cDNA sequence for P707P (also referred to as 11-C9)
SEQ ID NO: 334 is the determined cDNA sequence for P714P
SEQ ID NO: 335 is the determined cDNA sequence for P705P (also referred to as 9-F3)
SEQ ID NO: 336 is the predicted amino acid sequence for P705P
SEQ ID NO: 337 is the amino acid sequence of the peptide P1S#10
SEQ ID NO: 338 is the amino acid sequence of the peptide p5
SEQ ID NO: 339 is the predicted amino acid sequence of P509S
SEQ ID NO: 340 is the determined cDNA sequence for P778P
SEQ ID NO: 341 is the determined cDNA sequence for P786P
SEQ ID NO: 342 is the determined cDNA sequence for P789P

- SEQ ID NO: 343 is the determined cDNA sequence for a clone showing homology to Homo sapiens MM46 mRNA
- SEQ ID NO: 344 is the determined cDNA sequence for a clone showing homology to Homo sapiens TNF-alpha stimulated ABC protein (ABC50) mRNA
- SEQ ID NO: 345 is the determined cDNA sequence for a clone showing homology to Homo sapiens mRNA for E-cadherin
- SEQ ID NO: 346 is the determined cDNA sequence for a clone showing homology to Human nuclear-encoded mitochondrial serine hydroxymethyltransferase (SHMT)
- SEQ ID NO: 347 is the determined cDNA sequence for a clone showing homology to Homo sapiens natural resistance-associated macrophage protein2 (NRAMP2)
- SEQ ID NO: 348 is the determined cDNA sequence for a clone showing homology to Homo sapiens phosphoglucomutase-related protein (PGMRP)
- SEQ ID NO: 349 is the determined cDNA sequence for a clone showing homology to Human mRNA for proteosome subunit p40
- SEQ ID NO: 350 is the determined cDNA sequence for P777P
- SEQ ID NO: 351 is the determined cDNA sequence for P779P
- SEQ ID NO: 352 is the determined cDNA sequence for P790P
- SEQ ID NO: 353 is the determined cDNA sequence for P784P
- SEQ ID NO: 354 is the determined cDNA sequence for P776P
- SEQ ID NO: 355 is the determined cDNA sequence for P780P
- SEQ ID NO: 356 is the determined cDNA sequence for P544S
- SEQ ID NO: 357 is the determined cDNA sequence for P745S
- SEQ ID NO: 358 is the determined cDNA sequence for P782P
- SEQ ID NO: 359 is the determined cDNA sequence for P783P
- SEQ ID NO: 360 is the determined cDNA sequence for unknown 17984
- SEQ ID NO: 361 is the determined cDNA sequence for P787P
- SEQ ID NO: 362 is the determined cDNA sequence for P788P
- SEQ ID NO: 363 is the determined cDNA sequence for unknown 17994
- SEQ ID NO: 364 is the determined cDNA sequence for P781P
- SEQ ID NO: 365 is the determined cDNA sequence for P785P
- SEQ ID NO: 366-375 are the determined cDNA sequences for splice variants of B305D.
- SEQ ID NO: 376 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 366.
- SEQ ID NO: 377 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 372.
- SEQ ID NO: 378 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 373.

SEQ ID NO: 379 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 374.

SEQ ID NO: 380 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 375.

SEQ ID NO: 381 is the determined cDNA sequence for B716P.

SEQ ID NO: 382 is the determined full-length cDNA sequence for P711P.

SEQ ID NO: 383 is the predicted amino acid sequence for P711P.

SEQ ID NO: 384 is the cDNA sequence for P1000C.

SEQ ID NO: 385 is the cDNA sequence for CGI-82.

SEQ ID NO:386 is the cDNA sequence for 23320.

SEQ ID NO:387 is the cDNA sequence for CGI-69.

SEQ ID NO:388 is the cDNA sequence for L-iditol-2-dehydrogenase.

SEQ ID NO:389 is the cDNA sequence for 23379.

SEQ ID NO:390 is the cDNA sequence for 23381.

SEQ ID NO:391 is the cDNA sequence for KIAA0122.

SEQ ID NO:392 is the cDNA sequence for 23399.

SEQ ID NO:393 is the cDNA sequence for a previously identified gene.

SEQ ID NO:394 is the cDNA sequence for HCLBP.

SEQ ID NO:395 is the cDNA sequence for transglutaminase.

SEQ ID NO:396 is the cDNA sequence for a previously identified gene.

SEQ ID NO:397 is the cDNA sequence for PAP.

SEQ ID NO:398 is the cDNA sequence for Ets transcription factor PDEF.

SEQ ID NO:399 is the cDNA sequence for hTGR.

SEQ ID NO:400 is the cDNA sequence for KIAA0295.

SEQ ID NO:401 is the cDNA sequence for 22545.

SEQ ID NO:402 is the cDNA sequence for 22547.

SEQ ID NO:403 is the cDNA sequence for 22548.

SEQ ID NO:404 is the cDNA sequence for 22550.

SEQ ID NO:405 is the cDNA sequence for 22551.

SEQ ID NO:406 is the cDNA sequence for 22552.

SEQ ID NO:407 is the cDNA sequence for 22553.

SEQ ID NO:408 is the cDNA sequence for 22558.

SEQ ID NO:409 is the cDNA sequence for 22562.

SEQ ID NO:410 is the cDNA sequence for 22565.

SEQ ID NO:411 is the cDNA sequence for 22567.

SEQ ID NO:412 is the cDNA sequence for 22568.

SEQ ID NO:413 is the cDNA sequence for 22570.

SEQ ID NO:414 is the cDNA sequence for 22571.
SEQ ID NO:415 is the cDNA sequence for 22572.
SEQ ID NO:416 is the cDNA sequence for 22573.
SEQ ID NO:417 is the cDNA sequence for 22573.
SEQ ID NO:418 is the cDNA sequence for 22575.
SEQ ID NO:419 is the cDNA sequence for 22580.
SEQ ID NO:420 is the cDNA sequence for 22581.
SEQ ID NO:421 is the cDNA sequence for 22582.
SEQ ID NO:422 is the cDNA sequence for 22583.
SEQ ID NO:423 is the cDNA sequence for 22584.
SEQ ID NO:424 is the cDNA sequence for 22585.
SEQ ID NO:425 is the cDNA sequence for 22586.
SEQ ID NO:426 is the cDNA sequence for 22587.
SEQ ID NO:427 is the cDNA sequence for 22588.
SEQ ID NO:428 is the cDNA sequence for 22589.
SEQ ID NO:429 is the cDNA sequence for 22590.
SEQ ID NO:430 is the cDNA sequence for 22591.
SEQ ID NO:431 is the cDNA sequence for 22592.
SEQ ID NO:432 is the cDNA sequence for 22593.
SEQ ID NO:433 is the cDNA sequence for 22594.
SEQ ID NO:434 is the cDNA sequence for 22595.
SEQ ID NO:435 is the cDNA sequence for 22596.
SEQ ID NO:436 is the cDNA sequence for 22847.
SEQ ID NO:437 is the cDNA sequence for 22848.
SEQ ID NO:438 is the cDNA sequence for 22849.
SEQ ID NO:439 is the cDNA sequence for 22851.
SEQ ID NO:440 is the cDNA sequence for 22852.
SEQ ID NO:441 is the cDNA sequence for 22853.
SEQ ID NO:442 is the cDNA sequence for 22854.
SEQ ID NO:443 is the cDNA sequence for 22855.
SEQ ID NO:444 is the cDNA sequence for 22856.
SEQ ID NO:445 is the cDNA sequence for 22857.
SEQ ID NO:446 is the cDNA sequence for 23601.
SEQ ID NO:447 is the cDNA sequence for 23602.
SEQ ID NO:448 is the cDNA sequence for 23605.
SEQ ID NO:449 is the cDNA sequence for 23606.
SEQ ID NO:450 is the cDNA sequence for 23612.

SEQ ID NO:451 is the cDNA sequence for 23614.
SEQ ID NO:452 is the cDNA sequence for 23618.
SEQ ID NO:453 is the cDNA sequence for 23622.
SEQ ID NO:454 is the cDNA sequence for folate hydrolase.
SEQ ID NO:455 is the cDNA sequence for LIM protein.
SEQ ID NO:456 is the cDNA sequence for a known gene.
SEQ ID NO:457 is the cDNA sequence for a known gene.
SEQ ID NO:458 is the cDNA sequence for a previously identified gene.
SEQ ID NO:459 is the cDNA sequence for 23045.
SEQ ID NO:460 is the cDNA sequence for 23032.
SEQ ID NO:461 is the cDNA sequence for 23054.
SEQ ID NOs:462-467 are cDNA sequences for known genes.
SEQ ID NOs:468-471 are cDNA sequences for P710P.
SEQ ID NO:472 is a cDNA sequence for P1001C.

DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer. The compositions described herein may include prostate tumor polypeptides, polynucleotides encoding such polypeptides, binding agents such as antibodies, antigen presenting cells (APCs) and/or immune system cells (*e.g.*, T cells). Polypeptides of the present invention generally comprise at least a portion (such as an immunogenic portion) of a prostate tumor protein or a variant thereof. A "prostate tumor protein" is a protein that is expressed in prostate tumor cells at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in a normal tissue, as determined using a representative assay provided herein. Certain prostate tumor proteins are tumor proteins that react detectably (within an immunoassay, such as an ELISA or Western blot) with antisera of a patient afflicted with prostate cancer. Polynucleotides of the subject invention generally comprise a DNA or RNA sequence that encodes all or a portion of such a polypeptide, or that is complementary to such a sequence. Antibodies are generally immune system proteins, or antigen-binding fragments thereof, that are capable of binding to a polypeptide as described above. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B-cells that express a polypeptide as described above. T cells that may be employed within such compositions are generally T cells that are specific for a polypeptide as described above.

The present invention is based on the discovery of human prostate tumor proteins. Sequences of polynucleotides encoding certain tumor proteins, or portions thereof, are provided in SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472. Sequences of polypeptides comprising at least a portion of a tumor protein are provided in SEQ ID NOs:112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380 and 383.

PROSTATE TUMOR PROTEIN POLYNUCLEOTIDES

Any polynucleotide that encodes a prostate tumor protein or a portion or other variant thereof as described herein is encompassed by the present invention. Preferred polynucleotides comprise at least 15 consecutive nucleotides, preferably at least 30 consecutive nucleotides and more preferably at least 45 consecutive nucleotides, that encode a portion of a prostate tumor protein. More preferably, a polynucleotide encodes an immunogenic portion of a prostate tumor protein. Polynucleotides complementary to any such sequences are also encompassed by the present invention. Polynucleotides may be single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic, cDNA or synthetic) or RNA molecules. RNA molecules include HnRNA molecules, which contain introns and correspond to a DNA molecule in a one-to-one manner, and mRNA molecules, which do not contain introns. Additional coding or non-coding sequences may, but need not, be present within a polynucleotide of the present invention, and a polynucleotide may, but need not, be linked to other molecules and/or support materials.

Polynucleotides may comprise a native sequence (*i.e.*, an endogenous sequence that encodes a prostate tumor protein or a portion thereof) or may comprise a variant of such a sequence. Polynucleotide variants may contain one or more substitutions, additions, deletions and/or insertions such that the immunogenicity of the encoded polypeptide is not diminished, relative to a native tumor protein. The effect on the immunogenicity of the encoded polypeptide may generally be assessed as described herein. Variants preferably exhibit at least about 70% identity, more preferably at least about 80% identity and most preferably at least about 90% identity to a polynucleotide sequence that encodes a native prostate tumor protein or a portion thereof.

Two polynucleotide or polypeptide sequences are said to be "identical" if the sequence of nucleotides or amino acids in the two sequences is the same when aligned for maximum correspondence as described below. Comparisons between two sequences are typically performed by comparing the sequences over a comparison window to identify and compare local regions of sequence similarity. A "comparison window" as used herein, refers to a segment of at least about 20 contiguous positions, usually 30 to about 75, 40 to about 50,

in which a sequence may be compared to a reference sequence of the same number of contiguous positions after the two sequences are optimally aligned.

Optimal alignment of sequences for comparison may be conducted using the Megalign program in the Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using default parameters. This program embodies several alignment schemes described in the following references: Dayhoff, M.O. (1978) A model of evolutionary change in proteins – Matrices for detecting distant relationships. In Dayhoff, M.O. (ed.) *Atlas of Protein Sequence and Structure*, National Biomedical Research Foundation, Washington DC Vol. 5, Suppl. 3, pp. 345-358; Hein J. (1990) Unified Approach to Alignment and Phylogenesis pp. 626-645 *Methods in Enzymology* vol. 183, Academic Press, Inc., San Diego, CA; Higgins, D.G. and Sharp, P.M. (1989) *CABIOS* 5:151-153; Myers, E.W. and Muller W. (1988) *CABIOS* 4:11-17; Robinson, E.D. (1971) *Comb. Theor* 11:105; Santou, N. Nes, M. (1987) *Mol. Biol. Evol.* 4:406-425; Sneath, P.H.A. and Sokal, R.R. (1973) *Numerical Taxonomy – the Principles and Practice of Numerical Taxonomy*, Freeman Press, San Francisco, CA; Wilbur, W.J. and Lipman, D.J. (1983) *Proc. Natl. Acad., Sci. USA* 80:726-730.

Preferably, the "percentage of sequence identity" is determined by comparing two optimally aligned sequences over a window of comparison of at least 20 positions, wherein the portion of the polynucleotide or polypeptide sequence in the comparison window may comprise additions or deletions (*i.e.*, gaps) of 20 percent or less, usually 5 to 15 percent, or 10 to 12 percent, as compared to the reference sequences (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleic acid bases or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the reference sequence (*i.e.*, the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

Variants may also, or alternatively, be substantially homologous to a native gene, or a portion or complement thereof. Such polynucleotide variants are capable of hybridizing under moderately stringent conditions to a naturally occurring DNA sequence encoding a native prostate tumor protein (or a complementary sequence). Suitable moderately stringent conditions include prewashing in a solution of 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and 0.2X SSC containing 0.1% SDS.

It will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal homology to

the nucleotide sequence of any native gene. Nonetheless, polynucleotides that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous genes that are altered as a result of one or more mutations, such as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

Polynucleotides may be prepared using any of a variety of techniques. For example, a polynucleotide may be identified, as described in more detail below, by screening a microarray of cDNAs for tumor-associated expression (*i.e.*, expression that is at least five fold greater in a prostate tumor than in normal tissue, as determined using a representative assay provided herein). Such screens may be performed using a Synteni microarray (Palo Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Alternatively, polypeptides may be amplified from cDNA prepared from cells expressing the proteins described herein, such as prostate tumor cells. Such polynucleotides may be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

An amplified portion may be used to isolate a full length gene from a suitable library (*e.g.*, a prostate tumor cDNA library) using well known techniques. Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be preferred for identifying 5' and upstream regions of genes. Genomic libraries are preferred for obtaining introns and extending 5' sequences.

For hybridization techniques, a partial sequence may be labeled (*e.g.*, by nick-translation or end-labeling with ^{32}P) using well known techniques. A bacterial or bacteriophage library is then screened by hybridizing filters containing denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (*see* Sambrook et al., *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The complete sequence may then be determined using

standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences are then assembled into a single contiguous sequence. A full length cDNA molecule can be generated by ligating suitable fragments, using well known techniques.

Alternatively, there are numerous amplification techniques for obtaining a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30 nucleotides in length, have a GC content of at least 50% and anneal to the target sequence at temperatures of about 68°C to 72°C. The amplified region may be sequenced as described above, and overlapping sequences assembled into a contiguous sequence.

One such amplification technique is inverse PCR (*see* Triglia et al., *Nucl. Acids Res.* 16:8186, 1988), which uses restriction enzymes to generate a fragment in the known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of amplification with the same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Another such technique is known as "rapid amplification of cDNA ends" or RACE. This technique involves the use of an internal primer and an external primer, which hybridizes to a polyA region or vector sequence, to identify sequences that are 5' and 3' of a known sequence. Additional techniques include capture PCR (Lagerstrom et al., *PCR Methods Applic.* 1:111-19, 1991) and walking PCR (Parker et al., *Nucl. Acids. Res.* 19:3055-60, 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be performed using well known programs (*e.g.*, NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence.

Certain nucleic acid sequences of cDNA molecules encoding at least a portion of a prostate tumor protein are provided in SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472. Isolation of these

polynucleotides is described below. Each of these prostate tumor proteins was overexpressed in prostate tumor tissue.

Polynucleotide variants may generally be prepared by any method known in the art, including chemical synthesis by, for example, solid phase phosphoramidite chemical synthesis. Modifications in a polynucleotide sequence may also be introduced using standard mutagenesis techniques, such as oligonucleotide-directed site-specific mutagenesis (*see* Adelman et al., *DNA* 2:183, 1983). Alternatively, RNA molecules may be generated by *in vitro* or *in vivo* transcription of DNA sequences encoding a prostate tumor protein, or portion thereof, provided that the DNA is incorporated into a vector with a suitable RNA polymerase promoter (such as T7 or SP6). Certain portions may be used to prepare an encoded polypeptide, as described herein. In addition, or alternatively, a portion may be administered to a patient such that the encoded polypeptide is generated *in vivo* (e.g., by transfecting antigen-presenting cells, such as dendritic cells, with a cDNA construct encoding a prostate tumor polypeptide, and administering the transfected cells to the patient).

A portion of a sequence complementary to a coding sequence (*i.e.*, an antisense polynucleotide) may also be used as a probe or to modulate gene expression. cDNA constructs that can be transcribed into antisense RNA may also be introduced into cells of tissues to facilitate the production of antisense RNA. An antisense polynucleotide may be used, as described herein, to inhibit expression of a tumor protein. Antisense technology can be used to control gene expression through triple-helix formation, which compromises the ability of the double helix to open sufficiently for the binding of polymerases, transcription factors or regulatory molecules (*see* Gee et al., *In Huber and Carr, Molecular and Immunologic Approaches*, Futura Publishing Co. (Mt. Kisco, NY; 1994)). Alternatively, an antisense molecule may be designed to hybridize with a control region of a gene (e.g., promoter, enhancer or transcription initiation site), and block transcription of the gene; or to block translation by inhibiting binding of a transcript to ribosomes.

A portion of a coding sequence, or of a complementary sequence, may also be designed as a probe or primer to detect gene expression. Probes may be labeled with a variety of reporter groups, such as radionuclides and enzymes, and are preferably at least 10 nucleotides in length, more preferably at least 20 nucleotides in length and still more preferably at least 30 nucleotides in length. Primers, as noted above, are preferably 22-30 nucleotides in length.

Any polynucleotide may be further modified to increase stability *in vivo*. Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3' ends; the use of phosphorothioate or 2' O-methyl rather than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such

as inosine, queosine and wybutosine, as well as acetyl- methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

Nucleotide sequences as described herein may be joined to a variety of other nucleotide sequences using established recombinant DNA techniques. For example, a polynucleotide may be cloned into any of a variety of cloning vectors, including plasmids, phagemids, lambda phage derivatives and cosmids. Vectors of particular interest include expression vectors, replication vectors, probe generation vectors and sequencing vectors. In general, a vector will contain an origin of replication functional in at least one organism, convenient restriction endonuclease sites and one or more selectable markers. Other elements will depend upon the desired use, and will be apparent to those of ordinary skill in the art.

Within certain embodiments, polynucleotides may be formulated so as to permit entry into a cell of a mammal, and expression therein. Such formulations are particularly useful for therapeutic purposes, as described below. Those of ordinary skill in the art will appreciate that there are many ways to achieve expression of a polynucleotide in a target cell, and any suitable method may be employed. For example, a polynucleotide may be incorporated into a viral vector such as, but not limited to, adenovirus, adeno-associated virus, retrovirus, or vaccinia or other pox virus (*e.g.*, avian pox virus). Techniques for incorporating DNA into such vectors are well known to those of ordinary skill in the art. A retroviral vector may additionally transfer or incorporate a gene for a selectable marker (to aid in the identification or selection of transduced cells) and/or a targeting moiety, such as a gene that encodes a ligand for a receptor on a specific target cell, to render the vector target specific. Targeting may also be accomplished using an antibody, by methods known to those of ordinary skill in the art.

Other formulations for therapeutic purposes include colloidal dispersion systems, such as macromolecule complexes, nanocapsules, microspheres, beads, and lipid-based systems including oil-in-water emulsions, micelles, mixed micelles, and liposomes. A preferred colloidal system for use as a delivery vehicle *in vitro* and *in vivo* is a liposome (*i.e.*, an artificial membrane vesicle). The preparation and use of such systems is well known in the art.

PROSTATE TUMOR POLYPEPTIDES

Within the context of the present invention, polypeptides may comprise at least an immunogenic portion of a prostate tumor protein or a variant thereof, as described herein. As noted above, a "prostate tumor protein" is a protein that is expressed by prostate tumor cells. Proteins that are prostate tumor proteins also react detectably within an immunoassay (such as an ELISA) with antisera from a patient with prostate cancer. Polypeptides as described herein may be of any length. Additional sequences derived from

the native protein and/or heterologous sequences may be present, and such sequences may (but need not) possess further immunogenic or antigenic properties.

An "immunogenic portion," as used herein is a portion of a protein that is recognized (*i.e.*, specifically bound) by a B-cell and/or T-cell surface antigen receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid residues of a prostate tumor protein or a variant thereof. Certain preferred immunogenic portions include peptides in which an N-terminal leader sequence and/or transmembrane domain have been deleted. Other preferred immunogenic portions may contain a small N- and/or C-terminal deletion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids), relative to the mature protein.

Immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press, 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with antigen-specific antibodies, antisera and/or T-cell lines or clones. As used herein, antisera and antibodies are "antigen-specific" if they specifically bind to an antigen (*i.e.*, they react with the protein in an ELISA or other immunoassay, and do not react detectably with unrelated proteins). Such antisera and antibodies may be prepared as described herein, and using well known techniques. An immunogenic portion of a native prostate tumor protein is a portion that reacts with such antisera and/or T-cells at a level that is not substantially less than the reactivity of the full length polypeptide (*e.g.*, in an ELISA and/or T-cell reactivity assay). Such immunogenic portions may react within such assays at a level that is similar to or greater than the reactivity of the full length polypeptide. Such screens may generally be performed using methods well known to those of ordinary skill in the art, such as those described in Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support and contacted with patient sera to allow binding of antibodies within the sera to the immobilized polypeptide. Unbound sera may then be removed and bound antibodies detected using, for example, ¹²⁵I-labeled Protein A.

As noted above, a composition may comprise a variant of a native prostate tumor protein. A polypeptide "variant," as used herein, is a polypeptide that differs from a native prostate tumor protein in one or more substitutions, deletions, additions and/or insertions, such that the immunogenicity of the polypeptide is not substantially diminished. In other words, the ability of a variant to react with antigen-specific antisera may be enhanced or unchanged, relative to the native protein, or may be diminished by less than 50%, and preferably less than 20%, relative to the native protein. Such variants may generally be identified by modifying one of the above polypeptide sequences and evaluating the reactivity of the modified polypeptide with antigen-specific antibodies or antisera as described herein.

Preferred variants include those in which one or more portions, such as an N-terminal leader sequence or transmembrane domain, have been removed. Other preferred variants include variants in which a small portion (e.g., 1-30 amino acids, preferably 5-15 amino acids) has been removed from the N- and/or C-terminal of the mature protein. Polypeptide variants preferably exhibit at least about 70%, more preferably at least about 90% and most preferably at least about 95% identity (determined as described above) to the identified polypeptides.

Preferably, a variant contains conservative substitutions. A "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide chemistry would expect the secondary structure and hydrophobic nature of the polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative changes include: (1) ala, pro, gly, glu, asp, gln, asn, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or alternatively, contain nonconservative changes. In a preferred embodiment, variant polypeptides differ from a native sequence by substitution, deletion or addition of five amino acids or fewer. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino acids that have minimal influence on the immunogenicity, secondary structure and hydrophobic nature of the polypeptide.

As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (e.g., poly-His), or to enhance binding of the polypeptide to a solid support. For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

Polypeptides may be prepared using any of a variety of well known techniques. Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression vectors known to those of ordinary skill in the art. Expression may be achieved in any appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host cells include prokaryotes, yeast and higher eukaryotic cells. Preferably, the host cells employed are

E. coli, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete recombinant protein or polypeptide into culture media may be first concentrated using a commercially available filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.

Portions and other variants having fewer than about 100 amino acids, and generally fewer than about 50 amino acids, may also be generated by synthetic means, using techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino acids are sequentially added to a growing amino acid chain. See Merrifield, *J. Am. Chem. Soc.* 85:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Perkin Elmer/Applied BioSystems Division (Foster City, CA), and may be operated according to the manufacturer's instructions.

Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises at least one polypeptide as described herein and an unrelated sequence, such as a known tumor protein. A fusion partner may, for example, assist in providing T helper epitopes (an immunological fusion partner), preferably T helper epitopes recognized by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain preferred fusion partners are both immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.

Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide components may be assembled separately, and ligated into an appropriate expression vector. The 3' end of the DNA sequence encoding one polypeptide component is ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

A peptide linker sequence may be employed to separate the first and the second polypeptide components by a distance sufficient to ensure that each polypeptide folds into its secondary and tertiary structures. Such a peptide linker sequence is incorporated into

the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following factors: (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a secondary structure that could interact with functional epitopes on the first and second polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as linkers include those disclosed in Maratea et al., *Gene* 40:39-46, 1985; Murphy et al., *Proc. Natl. Acad. Sci. USA* 83:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not required when the first and second polypeptides have non-essential N-terminal amino acid regions that can be used to separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

Fusion proteins are also provided that comprise a polypeptide of the present invention together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (*see, for example, Stoute et al. New Engl. J. Med.*, 336:86-91, 1997).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium *Haemophilus influenza B* (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The lipid tail ensures optimal presentation of the antigen to antigen presenting cells. Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemagglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as

amidase LYTA (encoded by the *LytA* gene; *Gene* 43:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible for the affinity to the choline or to some choline analogues such as DEAE. This property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see Biotechnology* 10:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

In general, polypeptides (including fusion proteins) and polynucleotides as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that is removed from its original environment. For example, a naturally-occurring protein is isolated if it is separated from some or all of the coexisting materials in the natural system. Preferably, such polypeptides are at least about 90% pure, more preferably at least about 95% pure and most preferably at least about 99% pure. A polynucleotide is considered to be isolated if, for example, it is cloned into a vector that is not a part of the natural environment.

BINDING AGENTS

The present invention further provides agents, such as antibodies and antigen-binding fragments thereof, that specifically bind to a prostate tumor protein. As used herein, an antibody, or antigen-binding fragment thereof, is said to "specifically bind" to a prostate tumor protein if it reacts at a detectable level (within, for example, an ELISA) with a prostate tumor protein, and does not react detectably with unrelated proteins under similar conditions. As used herein, "binding" refers to a noncovalent association between two separate molecules such that a complex is formed. The ability to bind may be evaluated by, for example, determining a binding constant for the formation of the complex. The binding constant is the value obtained when the concentration of the complex is divided by the product of the component concentrations. In general, two compounds are said to "bind," in the context of the present invention, when the binding constant for complex formation exceeds about 10^3 L/mol. The binding constant may be determined using methods well known in the art.

Binding agents may be further capable of differentiating between patients with and without a cancer, such as prostate cancer, using the representative assays provided herein. In other words, antibodies or other binding agents that bind to a prostate tumor protein will generate a signal indicating the presence of a cancer in at least about 20% of patients with the disease, and will generate a negative signal indicating the absence of the disease in at least about 90% of individuals without the cancer. To determine whether a binding agent satisfies this requirement, biological samples (*e.g.*, blood, sera, urine and/or tumor biopsies) from

patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an antibody or an antigen-binding fragment thereof. Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. *See, e.g., Harlow and Lane, Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (*e.g., mice, rats, rabbits, sheep or goats*). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically. Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity chromatography using the polypeptide coupled to a suitable solid support.

Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol.* 6:511-519, 1976, and improvements thereto. Briefly, these methods involve the preparation of immortal cell lines capable of producing antibodies having the desired specificity (*i.e., reactivity with the polypeptide of interest*). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen cells and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection. After a sufficient

time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are selected and their culture supernatants tested for binding activity against the polypeptide. Hybridomas having high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the yield, such as injection of the hybridoma cell line into the peritoneal cavity of a suitable vertebrate host, such as a mouse. Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process in, for example, an affinity chromatography step.

Within certain embodiments, the use of antigen-binding fragments of antibodies may be preferred. Such fragments include Fab fragments, which may be prepared using standard techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988) and digested by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be separated by affinity chromatography on protein A bead columns.

Monoclonal antibodies of the present invention may be coupled to one or more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include ^{90}Y , ^{123}I , ^{125}I , ^{131}I , ^{186}Re , ^{188}Re , ^{211}At , and ^{212}Bi . Preferred drugs include methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diphtheria toxin, cholera toxin, gelonin, *Pseudomonas* exotoxin, *Shigella* toxin, and pokeweed antiviral protein.

A therapeutic agent may be coupled (*e.g.*, covalently bonded) to a suitable monoclonal antibody either directly or indirectly (*e.g.*, via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-containing group, such as an anhydride or an acid halide, or with an alkyl group containing a good leaving group (*e.g.*, a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A linker group can also serve to increase the chemical reactivity of a substituent on an agent or an antibody, and

thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional or polyfunctional reagents, both homo- and hetero-functional (such as those described in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, *e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.

Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction of a disulfide bond (*e.g.*, U.S. Patent No. 4,489,710, to Spitler), by irradiation of a photolabile bond (*e.g.*, U.S. Patent No. 4,625,014, to Senter et al.), by hydrolysis of derivatized amino acid side chains (*e.g.*, U.S. Patent No. 4,638,045, to Kohn et al.), by serum complement-mediated hydrolysis (*e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.), and acid-catalyzed hydrolysis (*e.g.*, U.S. Patent No. 4,569,789, to Blattler et al.).

It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or linkers which provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (*e.g.*, U.S. Patent No. 4,507,234, to Kato et al.), peptides and polysaccharides such as aminodextran (*e.g.*, U.S. Patent No. 4,699,784, to Shih et al.). A carrier may also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (*e.g.*, U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating compounds that include those containing nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For example, U.S. Patent No. 4,673,562, to Davison et al. discloses representative chelating compounds and their synthesis.

A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody used, the antigen density on the tumor, and the rate of clearance of the antibody.

T CELLS

Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for a prostate tumor protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be isolated from bone marrow, peripheral blood, or a fraction of bone marrow or peripheral blood of a patient, using a commercially available cell separation system, such as the CEPRATE™ system, available from CellPro Inc., Bothell WA (*see also* U.S. Patent No. 5,240,856; U.S. Patent No. 5,215,926; WO 89/06280; WO 91/16116 and WO 92/07243). Alternatively, T cells may be derived from related or unrelated humans, non-human mammals, cell lines or cultures.

T cells may be stimulated with a prostate tumor polypeptide, polynucleotide encoding a prostate tumor polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, a prostate tumor polypeptide or polynucleotide is present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for a prostate tumor polypeptide if the T cells kill target cells coated with the polypeptide or expressing a gene encoding the polypeptide. T cell specificity may be evaluated using any of a variety of standard techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation, compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen et al., *Cancer Res.* 54:1065-1070, 1994. Alternatively, detection of the proliferation of T cells may be accomplished by a variety of known techniques. For example, T cell proliferation can be detected by measuring an increased rate of DNA synthesis (*e.g.*, by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated thymidine incorporated into DNA). Contact with a prostate tumor polypeptide (100 ng/ml - 100 µg/ml, preferably 200 ng/ml - 25 µg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells. Contact as described above for 2-3 hours should result in activation of the T cells, as measured using standard cytokine assays in which a two fold increase in the level of cytokine release (*e.g.*, TNF or IFN-γ) is indicative of T cell activation (*see* Coligan et al., *Current Protocols in Immunology*, vol. 1, Wiley Interscience

(Greene 1998)). T cells that have been activated in response to a prostate tumor polypeptide, polynucleotide or polypeptide-expressing APC may be CD4⁺ and/or CD8⁺. Prostate tumor protein-specific T cells may be expanded using standard techniques. Within preferred embodiments, the T cells are derived from either a patient or a related, or unrelated, donor and are administered to the patient following stimulation and expansion.

For therapeutic purposes, CD4⁺ or CD8⁺ T cells that proliferate in response to a prostate tumor polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be accomplished in a variety of ways. For example, the T cells can be re-exposed to a prostate tumor polypeptide, or a short peptide corresponding to an immunogenic portion of such a polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize a prostate tumor polypeptide. Alternatively, one or more T cells that proliferate in the presence of a prostate tumor protein can be expanded in number by cloning. Methods for cloning cells are well known in the art, and include limiting dilution.

PHARMACEUTICAL COMPOSITIONS AND VACCINES

Within certain aspects, polypeptides, polynucleotides, T cells and/or binding agents disclosed herein may be incorporated into pharmaceutical compositions or immunogenic compositions (*i.e.*, vaccines). Pharmaceutical compositions comprise one or more such compounds and a physiologically acceptable carrier. Vaccines may comprise one or more such compounds and a non-specific immune response enhancer. A non-specific immune response enhancer may be any substance that enhances an immune response to an exogenous antigen. Examples of non-specific immune response enhancers include adjuvants, biodegradable microspheres (*e.g.*, polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.*, Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound, within the composition or vaccine.

A pharmaceutical composition or vaccine may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Numerous gene delivery techniques are well known in the art, such as those described by Rolland, *Crit. Rev. Therap. Drug Carrier Systems* 15:143-198, 1998,

and references cited therein. Appropriate nucleic acid expression systems contain the necessary DNA sequences for expression in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface or secretes such an epitope. In a preferred embodiment, the DNA may be introduced using a viral expression system (e.g., vaccinia or other pox virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch et al., *Proc. Natl. Acad. Sci. USA* 86:317-321, 1989; Flexner et al., *Ann. N.Y. Acad. Sci.* 569:86-103, 1989; Flexner et al., *Vaccine* 8:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651; EP 0,345,242; WO 91/02805; Berkner, *Biotechniques* 6:616-627, 1988; Rosenfeld et al., *Science* 252:431-434, 1991; Kolls et al., *Proc. Natl. Acad. Sci. USA* 91:215-219, 1994; Kass-Eisler et al., *Proc. Natl. Acad. Sci. USA* 90:11498-11502, 1993; Guzman et al., *Circulation* 88:2838-2848, 1993; and Guzman et al., *Cir. Res.* 73:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer et al., *Science* 259:1745-1749, 1993 and reviewed by Cohen, *Science* 259:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells.

While any suitable carrier known to those of ordinary skill in the art may be employed in the pharmaceutical compositions of this invention, the type of carrier will vary depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. For oral administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (e.g., polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres are disclosed, for example, in U.S. Patent Nos. 4,897,268 and 5,075,109.

Such compositions may also comprise buffers (e.g., neutral buffered saline or phosphate buffered saline), carbohydrates (e.g., glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, chelating agents such as EDTA or glutathione, adjuvants (e.g., aluminum hydroxide) and/or

preservatives. Alternatively, compositions of the present invention may be formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of non-specific immune response enhancers may be employed in the vaccines of this invention. For example, an adjuvant may be included. Most adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune responses, such as lipid A, *Bordetella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI); Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ); aluminum salts such as aluminum hydroxide gel (alum) or aluminum phosphate; salts of calcium, iron or zinc; an insoluble suspension of acylated tyrosine; acylated sugars; cationically or anionically derivatized polysaccharides; polyphosphazenes; biodegradable microspheres; monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (*e.g.*, IFN- γ , IL-2 and IL-12) tend to favor the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (*e.g.*, IL-4, IL-5, IL-6, IL-10 and TNF- β) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt. MPL adjuvants are available from Ribi ImmunoChem Research Inc. (Hamilton, MT; *see* US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555. Another preferred adjuvant is a saponin, preferably QS21, which may be used alone or in combination with other adjuvants. For example, an enhanced system involves the combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is

quenched with cholesterol, as described in WO 96/33739. Other preferred formulations comprises an oil-in-water emulsion and tocopherol. A particularly potent adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210. Any vaccine provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient.

The compositions described herein may be administered as part of a sustained release formulation (*i.e.*, a formulation such as a capsule or sponge that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix and/or contained within a reservoir surrounded by a rate controlling membrane. Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of active component release. The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within pharmaceutical compositions and vaccines to facilitate production of an antigen-specific immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the antigen, to improve activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

Certain preferred embodiments of the present invention use dendritic cells or progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent APCs (Banchereau and Steinman, *Nature* 392:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (*see* Timmerman and Levy, *Ann. Rev. Med.* 50:507-529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*, with marked cytoplasmic processes (dendrites) visible *in vitro*) and based on the lack of differentiation markers of B cells (CD19 and CD20), T cells (CD3), monocytes (CD14) and natural killer cells (CD56), as determined using standard assays. Dendritic cells may, of course, be engineered to express specific cell-

surface receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used within a vaccine (*see* Zitvogel et al., *Nature Med.* 4:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNF α to cultures of monocytes harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNF α , CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized phenotypes. However, this nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fc γ receptor, mannose receptor and DEC-205 marker. The mature phenotype is typically characterized by a lower expression of these markers, but a high expression of cell surface molecules responsible for T cell activation such as class I and class II MHC, adhesion molecules (*e.g.*, CD54 and CD11) and costimulatory molecules (*e.g.*, CD40, CD80 and CD86).

APCs may generally be transfected with a polynucleotide encoding a prostate tumor protein (or portion or other variant thereof) such that the prostate tumor polypeptide, or an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex vivo*, and a composition or vaccine comprising such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi et al., *Immunology and cell Biology* 75:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells with the prostate tumor polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant bacterium or viruses (*e.g.*, vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that

provides T cell help (e.g., a carrier molecule). Alternatively, a dendritic cell may be pulsed with a non-conjugated immunological partner, separately or in the presence of the polypeptide.

CANCER THERAPY

In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as prostate cancer. Within such methods, pharmaceutical compositions and vaccines are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of a cancer or to treat a patient afflicted with a cancer. A cancer may be diagnosed using criteria generally accepted in the art, including the presence of a malignant tumor. Pharmaceutical compositions and vaccines may be administered either prior to or following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host immune system to react against tumors with the administration of immune response-modifying agents (such as polypeptides and polynucleotides disclosed herein).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not necessarily depend on an intact host immune system. Examples of effector cells include T cells as discussed above, T lymphocytes (such as CD8⁺ cytotoxic T lymphocytes and CD4⁺ T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The polypeptides provided herein may also be used to generate antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein

may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic, macrophage, monocyte, fibroblast or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example, antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies have shown that cultured effector cells can be induced to grow *in vivo* and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see, for example, Cheever et al., Immunological Reviews 157:177, 1997*).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into antigen presenting cells taken from a patient and clonally propagated *ex vivo* for transplant back into the same patient. Transfected cells may be reintroduced into the patient using any means known in the art, preferably in sterile form by intravenous, intracavitary, intraperitoneal or intratumor administration.

Routes and frequency of administration of the therapeutic compositions disclosed herein, as well as dosage, will vary from individual to individual, and may be readily established using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g.*, intracutaneous, intramuscular, intravenous or subcutaneous), intranasally (*e.g.*, by aspiration) or orally. Preferably, between 1 and 10 doses may be administered over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 100 µg to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such

a response can be monitored by establishing an improved clinical outcome (e.g., more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to a prostate tumor protein generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

METHODS FOR DETECTING CANCER

In general, a cancer may be detected in a patient based on the presence of one or more prostate tumor proteins and/or polynucleotides encoding such proteins in a biological sample (for example, blood, sera, urine and/or tumor biopsies) obtained from the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as prostate cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of antigen that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA encoding a tumor protein, which is also indicative of the presence or absence of a cancer. In general, a prostate tumor sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. See, e.g., Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b) detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G, protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized binding

agent. Suitable polypeptides for use within such assays include full length prostate tumor proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the tumor protein may be attached. For example, the solid support may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking agent). Immobilization by adsorption to a well in a microtiter plate or to a membrane is preferred. In such cases, adsorption may be achieved by contacting the binding agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1 hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of binding agent ranging from about 10 ng to about 10 μ g, and preferably about 100 ng to about 1 μ g, is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.*, Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20™ (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the presence of polypeptide within a sample obtained from an individual with prostate cancer. Preferably, the contact time is sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve equilibrium may be readily determined by assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide. An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of time. Unbound detection reagent is then removed and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

To determine the presence or absence of a cancer, such as prostate cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered positive for the cancer. In an alternate preferred

embodiment, the cut-off value is determined using a Receiver Operator Curve, according to the method of Sackett et al., *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent. Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1 μ g, and more preferably from about 50 ng to about 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the tumor proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use prostate tumor polypeptides to

detect antibodies that bind to such polypeptides in a biological sample. The detection of such prostate tumor protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with a prostate tumor protein in a biological sample. Within certain methods, a biological sample comprising CD4⁺ and/or CD8⁺ T cells isolated from a patient is incubated with a prostate tumor polypeptide, a polynucleotide encoding such a polypeptide and/or an APC that expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with prostate tumor polypeptide (e.g., 5 - 25 µg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of prostate tumor polypeptide to serve as a control. For CD4⁺ T cells, activation is preferably detected by evaluating proliferation of the T cells. For CD8⁺ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding a prostate tumor protein in a biological sample. For example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to amplify a portion of a prostate tumor cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.*, hybridizes to) a polynucleotide encoding the prostate tumor protein. The amplified cDNA is then separated and detected using techniques well known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding a prostate tumor protein may be used in a hybridization assay to detect the presence of polynucleotide encoding the tumor protein in a biological sample.

To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%, preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding a prostate tumor protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in length. Preferably, oligonucleotide primers and/or probes will hybridize to a polynucleotide encoding a polypeptide disclosed herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers

comprise at least 10 contiguous nucleotides, more preferably at least 15 contiguous nucleotides, of a DNA molecule having a sequence recited in SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375 and 381. Techniques for both PCR based assays and hybridization assays are well known in the art (*see, for example, Mullis et al., Cold Spring Harbor Symp. Quant. Biol., 51:263, 1987; Erlich ed., PCR Technology, Stockton Press, NY, 1989*).

One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample, such as biopsy tissue, and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification may be performed on biological samples taken from a test patient and from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered positive.

In another embodiment, the disclosed compositions may be used as markers for the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) or polynucleotide evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide or polynucleotide detected increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide or polynucleotide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple prostate tumor protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of tumor protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for tumor proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds, reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to a prostate tumor protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively, contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding a prostate tumor protein in a biological sample. Such kits generally comprise at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding a prostate tumor protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay. Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding a prostate tumor protein.

The following Examples are offered by way of illustration and not by way of limitation.

EXAMPLES

EXAMPLE 1

ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES

This Example describes the isolation of certain prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library was constructed from prostate tumor poly A⁺ RNA using a Superscript Plasmid System for cDNA Synthesis and Plasmid Cloning kit (BRL Life Technologies, Gaithersburg, MD 20897) following the manufacturer's protocol. Specifically, prostate tumor tissues were homogenized with polytron (Kinematica, Switzerland) and total RNA was extracted using Trizol reagent (BRL Life Technologies) as directed by the manufacturer. The poly A⁺ RNA was then purified using a Qiagen oligotex spin column mRNA purification kit (Qiagen, Santa Clarita, CA 91355) according to the manufacturer's protocol. First-strand cDNA was synthesized using the NotI/Oligo-dT18 primer. Double-stranded cDNA was synthesized, ligated with EcoRI/BAXI adaptors (Invitrogen, San Diego, CA) and digested with NotI. Following size fractionation with Chroma Spin-1000 columns (Clontech, Palo Alto, CA), the cDNA was ligated into the EcoRI/NotI site of pCDNA3.1 (Invitrogen) and transformed into ElectroMax *E. coli* DH10B cells (BRL Life Technologies) by electroporation.

Using the same procedure, a normal human pancreas cDNA expression library was prepared from a pool of six tissue specimens (Clontech). The cDNA libraries were characterized by determining the number of independent colonies, the percentage of clones that carried insert, the average insert size and by sequence analysis. The prostate tumor library contained 1.64×10^7 independent colonies, with 70% of clones having an insert and the average insert size being 1745 base pairs. The normal pancreas cDNA library contained 3.3×10^6 independent colonies, with 69% of clones having inserts and the average insert size being 1120 base pairs. For both libraries, sequence analysis showed that the majority of clones had a full length cDNA sequence and were synthesized from mRNA, with minimal rRNA and mitochondrial DNA contamination.

cDNA library subtraction was performed using the above prostate tumor and normal pancreas cDNA libraries, as described by Hara *et al.* (*Blood*, 84:189-199, 1994) with some modifications. Specifically, a prostate tumor-specific subtracted cDNA library was generated as follows. Normal pancreas cDNA library (70 μ g) was digested with EcoRI, NotI, and SfuI, followed by a filling-in reaction with DNA polymerase Klenow fragment. After phenol-chloroform extraction and ethanol precipitation, the DNA was dissolved in 100 μ l of

H₂O, heat-denatured and mixed with 100 μ l (100 μ g) of Photoprobe biotin (Vector Laboratories, Burlingame, CA). As recommended by the manufacturer, the resulting mixture was irradiated with a 270 W sunlamp on ice for 20 minutes. Additional Photoprobe biotin (50 μ l) was added and the biotinylation reaction was repeated. After extraction with butanol five times, the DNA was ethanol-precipitated and dissolved in 23 μ l H₂O to form the driver DNA.

To form the tracer DNA, 10 μ g prostate tumor cDNA library was digested with BamHI and XhoI, phenol chloroform extracted and passed through Chroma spin-400 columns (Clontech). Following ethanol precipitation, the tracer DNA was dissolved in 5 μ l H₂O. Tracer DNA was mixed with 15 μ l driver DNA and 20 μ l of 2 x hybridization buffer (1.5 M NaCl/10 mM EDTA/50 mM HEPES pH 7.5/0.2% sodium dodecyl sulfate), overlaid with mineral oil, and heat-denatured completely. The sample was immediately transferred into a 68 °C water bath and incubated for 20 hours (long hybridization [LH]). The reaction mixture was then subjected to a streptavidin treatment followed by phenol/chloroform extraction. This process was repeated three more times. Subtracted DNA was precipitated, dissolved in 12 μ l H₂O, mixed with 8 μ l driver DNA and 20 μ l of 2 x hybridization buffer, and subjected to a hybridization at 68 °C for 2 hours (short hybridization [SH]). After removal of biotinylated double-stranded DNA, subtracted cDNA was ligated into BamHI/XhoI site of chloramphenicol resistant pBCSK⁺ (Stratagene, La Jolla, CA 92037) and transformed into ElectroMax *E. coli* DH10B cells by electroporation to generate a prostate tumor specific subtracted cDNA library (referred to as "prostate subtraction 1").

To analyze the subtracted cDNA library, plasmid DNA was prepared from 100 independent clones, randomly picked from the subtracted prostate tumor specific library and grouped based on insert size. Representative cDNA clones were further characterized by DNA sequencing with a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A (Foster City, CA). Six cDNA clones, hereinafter referred to as F1-13, F1-12, F1-16, H1-1, H1-9 and H1-4, were shown to be abundant in the subtracted prostate-specific cDNA library. The determined 3' and 5' cDNA sequences for F1-12 are provided in SEQ ID NO: 2 and 3, respectively, with determined 3' cDNA sequences for F1-13, F1-16, H1-1, H1-9 and H1-4 being provided in SEQ ID NO: 1 and 4-7, respectively.

The cDNA sequences for the isolated clones were compared to known sequences in the gene bank using the EMBL and GenBank databases (release 96). Four of the prostate tumor cDNA clones, F1-13, F1-16, H1-1, and H1-4, were determined to encode the following previously identified proteins: prostate specific antigen (PSA), human glandular kallikrein, human tumor expression enhanced gene, and mitochondria cytochrome C oxidase subunit II. H1-9 was found to be identical to a previously identified human

autonomously replicating sequence. No significant homologies to the cDNA sequence for F1-12 were found.

Subsequent studies led to the isolation of a full-length cDNA sequence for F1-12. This sequence is provided in SEQ ID NO: 107, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 108.

To clone less abundant prostate tumor specific genes, cDNA library subtraction was performed by subtracting the prostate tumor cDNA library described above with the normal pancreas cDNA library and with the three most abundant genes in the previously subtracted prostate tumor specific cDNA library: human glandular kallikrein, prostate specific antigen (PSA), and mitochondria cytochrome C oxidase subunit II. Specifically, 1 µg each of human glandular kallikrein, PSA and mitochondria cytochrome C oxidase subunit II cDNAs in pCDNA3.1 were added to the driver DNA and subtraction was performed as described above to provide a second subtracted cDNA library hereinafter referred to as the "subtracted prostate tumor specific cDNA library with spike".

Twenty-two cDNA clones were isolated from the subtracted prostate tumor specific cDNA library with spike. The determined 3' and 5' cDNA sequences for the clones referred to as J1-17, L1-12, N1-1862, J1-13, J1-19, J1-25, J1-24, K1-58, K1-63, L1-4 and L1-14 are provided in SEQ ID NOS: 8-9, 10-11, 12-13, 14-15, 16-17, 18-19, 20-21, 22-23, 24-25, 26-27 and 28-29, respectively. The determined 3' cDNA sequences for the clones referred to as J1-12, J1-16, J1-21, K1-48, K1-55, L1-2, L1-6, N1-1858, N1-1860, N1-1861, N1-1864 are provided in SEQ ID NOS: 30-40, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to three of the five most abundant DNA species, (J1-17, L1-12 and N1-1862; SEQ ID NOS: 8-9, 10-11 and 12-13, respectively). Of the remaining two most abundant species, one (J1-12; SEQ ID NO:30) was found to be identical to the previously identified human pulmonary surfactant-associated protein, and the other (K1-48; SEQ ID NO:33) was determined to have some homology to *R. norvegicus* mRNA for 2-arylpropionyl-CoA epimerase. Of the 17 less abundant cDNA clones isolated from the subtracted prostate tumor specific cDNA library with spike, four (J1-16, K1-55, L1-6 and N1-1864; SEQ ID NOS:31, 34, 36 and 40, respectively) were found to be identical to previously identified sequences, two (J1-21 and N1-1860; SEQ ID NOS: 32 and 38, respectively) were found to show some homology to non-human sequences, and two (L1-2 and N1-1861; SEQ ID NOS: 35 and 39, respectively) were found to show some homology to known human sequences. No significant homologies were found to the polypeptides J1-13, J1-19, J1-24, J1-25, K1-58, K1-63, L1-4, L1-14 (SEQ ID NOS: 14-15, 16-17, 20-21, 18-19, 22-23, 24-25, 26-27, 28-29, respectively).

Subsequent studies led to the isolation of full length cDNA sequences for J1-17, L1-12 and N1-1862 (SEQ ID NOS: 109-111, respectively). The corresponding predicted

amino acid sequences are provided in SEQ ID NOS: 112-114. L1-12 is also referred to as P501S.

In a further experiment, four additional clones were identified by subtracting a prostate tumor cDNA library with normal prostate cDNA prepared from a pool of three normal prostate poly A+ RNA (referred to as "prostate subtraction 2"). The determined cDNA sequences for these clones, hereinafter referred to as U1-3064, U1-3065, V1-3692 and 1A-3905, are provided in SEQ ID NO: 69-72, respectively. Comparison of the determined sequences with those in the gene bank revealed no significant homologies to U1-3065.

A second subtraction with spike (referred to as "prostate subtraction spike 2") was performed by subtracting a prostate tumor specific cDNA library with spike with normal pancreas cDNA library and further spiked with PSA, J1-17, pulmonary surfactant-associated protein, mitochondrial DNA, cytochrome c oxidase subunit II, N1-1862, autonomously replicating sequence, L1-12 and tumor expression enhanced gene. Four additional clones, hereinafter referred to as V1-3686, R1-2330, 1B-3976 and V1-3679, were isolated. The determined cDNA sequences for these clones are provided in SEQ ID NO: 73-76, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to V1-3686 and R1-2330.

Further analysis of the three prostate subtractions described above (prostate subtraction 2, subtracted prostate tumor specific cDNA library with spike, and prostate subtraction spike 2) resulted in the identification of sixteen additional clones, referred to as 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1G-4734, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4810, 1I-4811, 1J-4876, 1K-4884 and 1K-4896. The determined cDNA sequences for these clones are provided in SEQ ID NOS: 77-92, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to 1G-4741, 1G-4734, 1I-4807, 1J-4876 and 1K-4896 (SEQ ID NOS: 79, 81, 87, 90 and 92, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4807, 1J-4876, 1K-4884 and 1K-4896, provided in SEQ ID NOS: 179-188 and 191-193, respectively, and to the determination of additional partial cDNA sequences for 1I-4810 and 1I-4811, provided in SEQ ID NOS: 189 and 190, respectively.

Additional studies with prostate subtraction spike 2 resulted in the isolation of three more clones. Their sequences were determined as described above and compared to the most recent GenBank. All three clones were found to have homology to known genes, which are Cysteine-rich protein, KIAA0242, and KIAA0280 (SEQ ID NO: 317, 319, and 320, respectively). Further analysis of these clones by Synteni microarray (Synteni, Palo Alto, CA) demonstrated that all three clones were over-expressed in most prostate tumors and

prostate BPH, as well as in the majority of normal prostate tissues tested, but low expression in all other normal tissues.

An additional subtraction was performed by subtracting a normal prostate cDNA library with normal pancreas cDNA (referred to as "prostate subtraction 3"). This led to the identification of six additional clones referred to as 1G-4761, 1G-4762, 1H-4766, 1H-4770, 1H-4771 and 1H-4772 (SEQ ID NOS: 93-98). Comparison of these sequences with those in the gene bank revealed no significant homologies to 1G-4761 and 1H-4771 (SEQ ID NOS: 93 and 97, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1G-4761, 1G-4762, 1H-4766 and 1H-4772 provided in SEQ ID NOS: 194-196 and 199, respectively, and to the determination of additional partial cDNA sequences for 1H-4770 and 1H-4771, provided in SEQ ID NOS: 197 and 198, respectively.

Subtraction of a prostate tumor cDNA library, prepared from a pool of polyA+ RNA from three prostate cancer patients, with a normal pancreas cDNA library (prostate subtraction 4) led to the identification of eight clones, referred to as 1D-4297, 1D-4309, 1D.1-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280 (SEQ ID NOS: 99-107). These sequences were compared to those in the gene bank as described above. No significant homologies were found to 1D-4283 and 1D-4304 (SEQ ID NOS: 103 and 104, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1D-4309, 1D.1-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280, provided in SEQ ID NOS: 200-206, respectively.

cDNA clones isolated in prostate subtraction 1 and prostate subtraction 2, described above, were colony PCR amplified and their mRNA expression levels in prostate tumor, normal prostate and in various other normal tissues were determined using microarray technology (Synteni, Palo Alto, CA). Briefly, the PCR amplification products were dotted onto slides in an array format, with each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, reverse transcribed, and fluorescent-labeled cDNA probes were generated. The microarrays were probed with the labeled cDNA probes, the slides scanned and fluorescence intensity was measured. This intensity correlates with the hybridization intensity. Two clones (referred to as P509S and P510S) were found to be over-expressed in prostate tumor and normal prostate and expressed at low levels in all other normal tissues tested (liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon). The determined cDNA sequences for P509S and P510S are provided in SEQ ID NO: 223 and 224, respectively. Comparison of these sequences with those in the gene bank as described above, revealed some homology to previously identified ESTs.

Additional, studies led to the isolation of the full-length cDNA sequence for P509S. This sequence is provided in SEQ ID NO: 332, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 339.

EXAMPLE 2

DETERMINATION OF TISSUE SPECIFICITY OF PROSTATE TUMOR POLYPEPTIDES

Using gene specific primers, mRNA expression levels for the representative prostate tumor polypeptides F1-16, H1-1, J1-17 (also referred to as P502S), L1-12 (also referred to as P501S), F1-12 (also referred to as P504S) and N1-1862 (also referred to as P503S) were examined in a variety of normal and tumor tissues using RT-PCR.

Briefly, total RNA was extracted from a variety of normal and tumor tissues using Trizol reagent as described above. First strand synthesis was carried out using 1-2 μ g of total RNA with SuperScript II reverse transcriptase (BRL Life Technologies) at 42 °C for one hour. The cDNA was then amplified by PCR with gene-specific primers. To ensure the semi-quantitative nature of the RT-PCR, β -actin was used as an internal control for each of the tissues examined. First, serial dilutions of the first strand cDNAs were prepared and RT-PCR assays were performed using β -actin specific primers. A dilution was then chosen that enabled the linear range amplification of the β -actin template and which was sensitive enough to reflect the differences in the initial copy numbers. Using these conditions, the β -actin levels were determined for each reverse transcription reaction from each tissue. DNA contamination was minimized by DNase treatment and by assuring a negative PCR result when using first strand cDNA that was prepared without adding reverse transcriptase.

mRNA Expression levels were examined in four different types of tumor tissue (prostate tumor from 2 patients, breast tumor from 3 patients, colon tumor, lung tumor), and sixteen different normal tissues, including prostate, colon, kidney, liver, lung, ovary, pancreas, skeletal muscle, skin, stomach, testes, bone marrow and brain. F1-16 was found to be expressed at high levels in prostate tumor tissue, colon tumor and normal prostate, and at lower levels in normal liver, skin and testes, with expression being undetectable in the other tissues examined. H1-1 was found to be expressed at high levels in prostate tumor, lung tumor, breast tumor, normal prostate, normal colon and normal brain, at much lower levels in normal lung, pancreas, skeletal muscle, skin, small intestine, bone marrow, and was not detected in the other tissues tested. J1-17 (P502S) and L1-12 (P501S) appear to be specifically over-expressed in prostate, with both genes being expressed at high levels in prostate tumor and normal prostate but at low to undetectable levels in all the other tissues examined. N1-1862 (P503S) was found to be over-expressed in 60% of prostate tumors and detectable in normal colon and kidney. The RT-PCR results thus indicate that

F1-16, H1-1, J1-17 (P502S), N1-1862 (P503S) and L1-12 (P501S) are either prostate specific or are expressed at significantly elevated levels in prostate.

Further RT-PCR studies showed that F1-12 (P504S) is over-expressed in 60% of prostate tumors, detectable in normal kidney but not detectable in all other tissues tested. Similarly, R1-2330 was shown to be over-expressed in 40% of prostate tumors, detectable in normal kidney and liver, but not detectable in all other tissues tested. U1-3064 was found to be over-expressed in 60% of prostate tumors, and also expressed in breast and colon tumors, but was not detectable in normal tissues.

RT-PCR characterization of R1-2330, U1-3064 and 1D-4279 showed that these three antigens are over-expressed in prostate and/or prostate tumors.

Northern analysis with four prostate tumors, two normal prostate samples, two BPH prostates, and normal colon, kidney, liver, lung, pancreas, skeletal muscle, brain, stomach, testes, small intestine and bone marrow, showed that L1-12 (P501S) is over-expressed in prostate tumors and normal prostate, while being undetectable in other normal tissues tested. J1-17 (P502S) was detected in two prostate tumors and not in the other tissues tested. N1-1862 (P503S) was found to be over-expressed in three prostate tumors and to be expressed in normal prostate, colon and kidney, but not in other tissues tested. F1-12 (P504S) was found to be highly expressed in two prostate tumors and to be undetectable in all other tissues tested.

The microarray technology described above was used to determine the expression levels of representative antigens described herein in prostate tumor, breast tumor and the following normal tissues: prostate, liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon. L1-12 (P501S) was found to be over-expressed in normal prostate and prostate tumor, with some expression being detected in normal skeletal muscle. Both J1-12 and F1-12 (P504S) were found to be over-expressed in prostate tumor, with expression being lower or undetectable in all other tissues tested. N1-1862 (P503S) was found to be expressed at high levels in prostate tumor and normal prostate, and at low levels in normal large intestine and normal colon, with expression being undetectable in all other tissues tested. R1-2330 was found to be over-expressed in prostate tumor and normal prostate, and to be expressed at lower levels in all other tissues tested. 1D-4279 was found to be over-expressed in prostate tumor and normal prostate, expressed at lower levels in normal spinal cord, and to be undetectable in all other tissues tested.

Further microarray analysis to specifically address the extent to which P501S (SEQ ID NO: 110) was expressed in breast tumor revealed moderate over-expression not only in breast tumor, but also in metastatic breast tumor (2/31), with negligible to low expression

in normal tissues. This data suggests that P501S may be over-expressed in various breast tumors as well as in prostate tumors.

The expression levels of 32 ESTs (expressed sequence tags) described by Vasmatazis *et al.* (*Proc. Natl. Acad. Sci. USA* 95:300-304, 1998) in a variety of tumor and normal tissues were examined by microarray technology as described above. Two of these clones (referred to as P1000C and P1001C) were found to be over-expressed in prostate tumor and normal prostate, and expressed at low to undetectable levels in all other tissues tested (normal aorta, thymus, resting and activated PBMC, epithelial cells, spinal cord, adrenal gland, fetal tissues, skin, salivary gland, large intestine, bone marrow, liver, lung, dendritic cells, stomach, lymph nodes, brain, heart, small intestine, skeletal muscle, colon and kidney. The determined cDNA sequences for P1000C and P1001C are provided in SEQ ID NO: 384 and 472, respectively. The sequence of P1001C was found to show some homology to the previously isolated Human mRNA for JM27 protein. No significant homologies were found to the sequence of P1000C.

The expression of the polypeptide encoded by the full length cDNA sequence for F1-12 (also referred to as P504S; SEQ ID NO: 108) was investigated by immunohistochemical analysis. Rabbit-anti-P504S polyclonal antibodies were generated against the full length P504S protein by standard techniques. Subsequent isolation and characterization of the polyclonal antibodies were also performed by techniques well known in the art. Immunohistochemical analysis showed that the P504S polypeptide was expressed in 100% of prostate carcinoma samples tested (n=5).

The rabbit-anti-P504S polyclonal antibody did not appear to label benign prostate cells with the same cytoplasmic granular staining, but rather with light nuclear staining. Analysis of normal tissues revealed that the encoded polypeptide was found to be expressed in some, but not all normal human tissues. Positive cytoplasmic staining with rabbit-anti-P504S polyclonal antibody was found in normal human kidney, liver, brain, colon and lung-associated macrophages, whereas heart and bone marrow were negative.

This data indicates that the P504S polypeptide is present in prostate cancer tissues, and that there are qualitative and quantitative differences in the staining between benign prostatic hyperplasia tissues and prostate cancer tissues, suggesting that this polypeptide may be detected selectively in prostate tumors and therefore be useful in the diagnosis of prostate cancer.

EXAMPLE 3

ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA subtraction library, containing cDNA from normal prostate subtracted with ten other normal tissue cDNAs (brain, heart, kidney, liver, lung, ovary, placenta, skeletal muscle, spleen and thymus) and then submitted to a first round of PCR amplification, was purchased from Clontech. This library was subjected to a second round of PCR amplification, following the manufacturer's protocol. The resulting cDNA fragments were subcloned into the vector pT7 Blue T-vector (Novagen, Madison, WI) and transformed into XL-1 Blue MRF' *E. coli* (Stratagene). DNA was isolated from independent clones and sequenced using a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A.

Fifty-nine positive clones were sequenced. Comparison of the DNA sequences of these clones with those in the gene bank, as described above, revealed no significant homologies to 25 of these clones, hereinafter referred to as P5, P8, P9, P18, P20, P30, P34, P36, P38, P39, P42, P49, P50, P53, P55, P60, P64, P65, P73, P75, P76, P79 and P84. The determined cDNA sequences for these clones are provided in SEQ ID NO: 41-45, 47-52 and 54-65, respectively. P29, P47, P68, P80 and P82 (SEQ ID NO: 46, 53 and 66-68, respectively) were found to show some degree of homology to previously identified DNA sequences. To the best of the inventors' knowledge, none of these sequences have been previously shown to be present in prostate.

Further studies using the PCR-based methodology described above resulted in the isolation of more than 180 additional clones, of which 23 clones were found to show no significant homologies to known sequences. The determined cDNA sequences for these clones are provided in SEQ ID NO: 115-123, 127, 131, 137, 145, 147-151, 153, 156-158 and 160. Twenty-three clones (SEQ ID NO: 124-126, 128-130, 132-136, 138-144, 146, 152, 154, 155 and 159) were found to show some homology to previously identified ESTs. An additional ten clones (SEQ ID NO: 161-170) were found to have some degree of homology to known genes. Larger cDNA clones containing the P20 sequence represent splice variants of a gene referred to as P703P. The determined DNA sequence for the variants referred to as DE1, DE13 and DE14 are provided in SEQ ID NOS: 171, 175 and 177, respectively, with the corresponding predicted amino acid sequences being provided in SEQ ID NO: 172, 176 and 178, respectively. The determined cDNA sequence for an extended spliced form of P703 is provided in SEQ ID NO: 225. The DNA sequences for the splice variants referred to as DE2 and DE6 are provided in SEQ ID NOS: 173 and 174, respectively.

mRNA Expression levels for representative clones in tumor tissues (prostate (n=5), breast (n=2), colon and lung) normal tissues (prostate (n=5), colon, kidney, liver, lung (n=2), ovary (n=2), skeletal muscle, skin, stomach, small intestine and brain), and activated

and non-activated PBMC was determined by RT-PCR as described above. Expression was examined in one sample of each tissue type unless otherwise indicated.

P9 was found to be highly expressed in normal prostate and prostate tumor compared to all normal tissues tested except for normal colon which showed comparable expression. P20, a portion of the P703P gene, was found to be highly expressed in normal prostate and prostate tumor, compared to all twelve normal tissues tested. A modest increase in expression of P20 in breast tumor (n=2), colon tumor and lung tumor was seen compared to all normal tissues except lung (1 of 2). Increased expression of P18 was found in normal prostate, prostate tumor and breast tumor compared to other normal tissues except lung and stomach. A modest increase in expression of P5 was observed in normal prostate compared to most other normal tissues. However, some elevated expression was seen in normal lung and PBMC. Elevated expression of P5 was also observed in prostate tumors (2 of 5), breast tumor and one lung tumor sample. For P30, similar expression levels were seen in normal prostate and prostate tumor, compared to six of twelve other normal tissues tested. Increased expression was seen in breast tumors, one lung tumor sample and one colon tumor sample, and also in normal PBMC. P29 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to the majority of normal tissues. However, substantial expression of P29 was observed in normal colon and normal lung (2 of 2). P80 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to all other normal tissues tested, with increased expression also being seen in colon tumor.

Further studies resulted in the isolation of twelve additional clones, hereinafter referred to as 10-d8, 10-h10, 11-c8, 7-g6, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3, 8-h11, 9-f12 and 9-f3. The determined DNA sequences for 10-d8, 10-h10, 11-c8, 8-d4, 8-d9, 8-h11, 9-f12 and 9-f3 are provided in SEQ ID NO: 207, 208, 209, 216, 217, 220, 221 and 222, respectively. The determined forward and reverse DNA sequences for 7-g6, 8-b5, 8-b6 and 8-g3 are provided in SEQ ID NO: 210 and 211; 212 and 213; 214 and 215; and 218 and 219, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to the sequence of 9-f3. The clones 10-d8, 11-c8 and 8-h11 were found to show some homology to previously isolated ESTs, while 10-h10, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3 and 9-f12 were found to show some homology to previously identified genes. Further characterization of 7-G6 and 8-G3 showed identity to the known genes PAP and PSA, respectively.

mRNA expression levels for these clones were determined using the micro-array technology described above. The clones 7-G6, 8-G3, 8-B5, 8-B6, 8-D4, 8-D9, 9-F3, 9-F12, 9-H3, 10-A2, 10-A4, 11-C9 and 11-F2 were found to be over-expressed in prostate tumor and normal prostate, with expression in other tissues tested being low or undetectable.

Increased expression of 8-F11 was seen in prostate tumor and normal prostate, bladder, skeletal muscle and colon. Increased expression of 10-H10 was seen in prostate tumor and normal prostate, bladder, lung, colon, brain and large intestine. Increased expression of 9-B1 was seen in prostate tumor, breast tumor, and normal prostate, salivary gland, large intestine and skin, with increased expression of 11-C8 being seen in prostate tumor, and normal prostate and large intestine.

An additional cDNA fragment derived from the PCR-based normal prostate subtraction, described above, was found to be prostate specific by both micro-array technology and RT-PCR. The determined cDNA sequence of this clone (referred to as 9-A11) is provided in SEQ ID NO: 226. Comparison of this sequence with those in the public databases revealed 99% identity to the known gene HOXB13.

Further studies led to the isolation of the clones 8-C6 and 8-H7. The determined cDNA sequences for these clones are provided in SEQ ID NO: 227 and 228, respectively. These sequences were found to show some homology to previously isolated ESTs.

PCR and hybridization-based methodologies were employed to obtain longer cDNA sequences for clone P20 (also referred to as P703P), yielding three additional cDNA fragments that progressively extend the 5' end of the gene. These fragments, referred to as P703PDE5, P703P6.26, and P703PX-23 (SEQ ID NO: 326, 328 and 330, with the predicted corresponding amino acid sequences being provided in SEQ ID NO: 327, 329 and 331, respectively) contain additional 5' sequence. P703PDE5 was recovered by screening of a cDNA library (#141-26) with a portion of P703P as a probe. P703P6.26 was recovered from a mixture of three prostate tumor cDNAs and P703PX_23 was recovered from cDNA library (#438-48). Together, the additional sequences include all of the putative mature serine protease along with part of the putative signal sequence. Further studies using a PCR-based subtraction library of a prostate tumor pool subtracted against a pool of normal tissues (referred to as JP: PCR subtraction) resulted in the isolation of thirteen additional clones, seven of which did not share any significant homology to known GenBank sequences. The determined cDNA sequences for these seven clones (P711P, P712P, novel 23, P774P, P775P, P710P and P768P) are provided in SEQ ID NO: 307-311, 313 and 315, respectively. The remaining six clones (SEQ ID NO: 316 and 321-325) were shown to share some homology to known genes. By microarray analysis, all thirteen clones showed three or more fold over-expression in prostate tissues, including prostate tumors, BPH and normal prostate as compared to normal non-prostate tissues. Clones P711P, P712P, novel 23 and P768P showed over-expression in most prostate tumors and BPH tissues tested (n=29), and in the majority of normal prostate tissues (n=4), but background to low expression levels in all normal tissues.

Clones P774P, P775P and P710P showed comparatively lower expression and expression in fewer prostate tumors and BPH samples, with negative to low expression in normal prostate.

The full-length cDNA for P711P was obtained by employing the partial sequence of SEQ ID NO: 307 to screen a prostate cDNA library. Specifically, a directionally cloned prostate cDNA library was prepared using standard techniques. One million colonies of this library were plated onto LB/Amp plates. Nylon membrane filters were used to lift these colonies, and the cDNAs which were picked up by these filters were denatured and cross-linked to the filters by UV light. The P711P cDNA fragment of SEQ ID NO: 307 was radio-labeled and used to hybridize with these filters. Positive clones were selected, and cDNAs were prepared and sequenced using an automatic Perkin Elmer/Applied Biosystems sequencer. The determined full-length sequence of P711P is provided in SEQ ID NO: 382, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 383.

Using PCR and hybridization-based methodologies, additional cDNA sequence information was derived for two clones described above, 11-C9 and 9-F3, herein after referred to as P707P and P714P, respectively (SEQ ID NO: 333 and 334). After comparison with the most recent GenBank, P707P was found to be a splice variant of the known gene HoxB13. In contrast, no significant homologies to P714P were found.

Clones 8-B3, P89, P98, P130 and P201 (as disclosed in U.S. Patent Application No. 09/020,956, filed February 9, 1998) were found to be contained within one contiguous sequence, referred to as P705P (SEQ ID NO: 335, with the predicted amino acid sequence provided in SEQ ID NO: 336), which was determined to be a splice variant of the known gene NKX 3.1.

EXAMPLE 4 SYNTHESIS OF POLYPEPTIDES

Polypeptides may be synthesized on a Perkin Elmer/Applied Biosystems 430A peptide synthesizer using FMOC chemistry with HPTU (O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate) activation. A Gly-Cys-Gly sequence may be attached to the amino terminus of the peptide to provide a method of conjugation, binding to an immobilized surface, or labeling of the peptide. Cleavage of the peptides from the solid support may be carried out using the following cleavage mixture: trifluoroacetic acid:ethanedithiol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for 2 hours, the peptides may be precipitated in cold methyl-t-butyl-ether. The peptide pellets may then be dissolved in water containing 0.1% trifluoroacetic acid (TFA) and lyophilized prior to purification by C18 reverse phase HPLC. A gradient of 0%-60% acetonitrile (containing 0.1% TFA) in water (containing 0.1% TFA) may be used to elute the peptides. Following

lyophilization of the pure fractions, the peptides may be characterized using electrospray or other types of mass spectrometry and by amino acid analysis.

EXAMPLE 5

FURTHER ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA library generated from prostate primary tumor mRNA as described above was subtracted with cDNA from normal prostate. The subtraction was performed using a PCR-based protocol (Clontech), which was modified to generate larger fragments. Within this protocol, tester and driver double stranded cDNA were separately digested with five restriction enzymes that recognize six-nucleotide restriction sites (MluI, MscI, PvuII, SalI and StuI). This digestion resulted in an average cDNA size of 600 bp, rather than the average size of 300 bp that results from digestion with RsaI according to the Clontech protocol. This modification did not affect the subtraction efficiency. Two tester populations were then created with different adapters, and the driver library remained without adapters.

The tester and driver libraries were then hybridized using excess driver cDNA. In the first hybridization step, driver was separately hybridized with each of the two tester cDNA populations. This resulted in populations of (a) unhybridized tester cDNAs, (b) tester cDNAs hybridized to other tester cDNAs, (c) tester cDNAs hybridized to driver cDNAs and (d) unhybridized driver cDNAs. The two separate hybridization reactions were then combined, and rehybridized in the presence of additional denatured driver cDNA. Following this second hybridization, in addition to populations (a) through (d), a fifth population (e) was generated in which tester cDNA with one adapter hybridized to tester cDNA with the second adapter. Accordingly, the second hybridization step resulted in enrichment of differentially expressed sequences which could be used as templates for PCR amplification with adaptor-specific primers.

The ends were then filled in, and PCR amplification was performed using adaptor-specific primers. Only population (e), which contained tester cDNA that did not hybridize to driver cDNA, was amplified exponentially. A second PCR amplification step was then performed, to reduce background and further enrich differentially expressed sequences.

This PCR-based subtraction technique normalizes differentially expressed cDNAs so that rare transcripts that are overexpressed in prostate tumor tissue may be recoverable. Such transcripts would be difficult to recover by traditional subtraction methods.

In addition to genes known to be overexpressed in prostate tumor, seventy-seven further clones were identified. Sequences of these partial cDNAs are provided in SEQ ID NO: 29 to 305. Most of these clones had no significant homology to database sequences. Exceptions were JPTPN23 (SEQ ID NO: 231; similarity to pig valosin-containing protein), JPTPN30 (SEQ ID NO: 234; similarity to rat mRNA for proteasome subunit), JPTPN45 (SEQ ID NO: 243; similarity to rat *norvegicus* cytosolic NADP-dependent isocitrate dehydrogenase), JPTPN46 (SEQ ID NO: 244; similarity to human subclone H8 4 d4 DNA sequence), JP1D6 (SEQ ID NO: 265; similarity to *G. gallus* dynein light chain-A), JP8D6 (SEQ ID NO: 288; similarity to human BAC clone RG016J04), JP8F5 (SEQ ID NO: 289; similarity to human subclone H8 3 b5 DNA sequence), and JP8E9 (SEQ ID NO: 299; similarity to human Alu sequence).

Additional studies using the PCR-based subtraction library consisting of a prostate tumor pool subtracted against a normal prostate pool (referred to as PT-PN PCR subtraction) yielded three additional clones. Comparison of the cDNA sequences of these clones with the most recent release of GenBank revealed no significant homologies to the two clones referred to as P715P and P767P (SEQ ID NO: 312 and 314). The remaining clone was found to show some homology to the known gene KIAA0056 (SEQ ID NO: 318). Using microarray analysis to measure mRNA expression levels in various tissues, all three clones were found to be over-expressed in prostate tumors and BPH tissues. Specifically, clone P715P was over-expressed in most prostate tumors and BPH tissues by a factor of three or greater, with elevated expression seen in the majority of normal prostate samples and in fetal tissue, but negative to low expression in all other normal tissues. Clone P767P was over-expressed in several prostate tumors and BPH tissues, with moderate expression levels in half of the normal prostate samples, and background to low expression in all other normal tissues tested.

Further analysis, by microarray as described above, of the PT-PN PCR subtraction library and of a DNA subtraction library containing cDNA from prostate tumor subtracted with a pool of normal tissue cDNAs, led to the isolation of 27 additional clones (SEQ ID NO: 340-365 and 381) which were determined to be over-expressed in prostate tumor. The clones of SEQ ID NO: 341, 342, 345, 347, 348, 349, 351, 355-359, 361, 362 and 364 were also found to be expressed in normal prostate. Expression of all 26 clones in a variety of normal tissues was found to be low or undetectable, with the exception of P544S (SEQ ID NO: 356) which was found to be expressed in small intestine. Of the 26 clones, 10 (SEQ ID NO: 340-349) were found to show some homology to previously identified sequences. No significant homologies were found to the clones of SEQ ID NO: 350-365.

EXAMPLE 6

PEPTIDE PRIMING OF MICE AND PROPAGATION OF CTL LINES

6.1. This Example illustrates the preparation of a CTL cell line specific for cells expressing the P502S gene.

Mice expressing the transgene for human HLA A2.1 (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with P2S#12 peptide (VLGWVAEL; SEQ ID NO: 306), which is derived from the P502S gene (also referred to herein as J1-17, SEQ ID NO: 8), as described by Theobald et al., *Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995 with the following modifications. Mice were immunized with 100 μ g of P2S#12 and 120 μ g of an I-A^b binding peptide derived from hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and using a nylon mesh single cell suspensions prepared. Cells were then resuspended at 6 x 10⁶ cells/ml in complete media (RPMI-1640; Gibco BRL, Gaithersburg, MD) containing 10% FCS, 2mM Glutamine (Gibco BRL), sodium pyruvate (Gibco BRL), non-essential amino acids (Gibco BRL), 2 x 10⁻⁵ M 2-mercaptoethanol, 50U/ml penicillin and streptomycin, and cultured in the presence of irradiated (3000 rads) P2S#12-pulsed (5mg/ml P2S#12 and 10mg/ml β 2-microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of 7 μ g/ml dextran sulfate and 25 μ g/ml LPS for 3 days). Six days later, cells (5 x 10⁵/ml) were restimulated with 2.5 x 10⁶/ml peptide pulsed irradiated (20,000 rads) EL4A2Kb cells (Sherman et al, *Science* 258:815-818, 1992) and 3 x 10⁶/ml A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20U/ml IL-2. Cells continued to be restimulated on a weekly basis as described, in preparation for cloning the line.

P2S#12 line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb tumor cells (1 x 10⁴ cells/ well) as stimulators and A2 transgenic spleen cells as feeders (5 x 10⁵ cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were

restimulated as before. On day 21, clones that were growing were isolated and maintained in culture. Several of these clones demonstrated significantly higher reactivity (lysis) against human fibroblasts (HLA A2.1 expressing) transduced with P502S than against control fibroblasts. An example is presented in Figure 1.

This data indicates that P2S #12 represents a naturally processed epitope of the P502S protein that is expressed in the context of the human HLA A2.1 molecule.

6.2. This Example illustrates the preparation of murine CTL lines and CTL clones specific for cells expressing the P501S gene.

This series of experiments were performed similarly to that described above. Mice were immunized with the P1S#10 peptide (SEQ ID NO: 337), which is derived from the P501S gene (also referred to herein as L1-12, SEQ ID NO: 110). The P1S#10 peptide was derived by analysis of the predicted polypeptide sequence for P501S for potential HLA-A2 binding sequences as defined by published HLA-A2 binding motifs (Parker, KC, *et al*, *J. Immunol.*, 152:163, 1994). P1S#10 peptide was synthesized as described in Example 4, and empirically tested for HLA-A2 binding using a T cell based competition assay. Predicted A2 binding peptides were tested for their ability to compete HLA-A2 specific peptide presentation to an HLA-A2 restricted CTL clone (D150M58), which is specific for the HLA-A2 binding influenza matrix peptide fluM58. D150M58 CTL secretes TNF in response to self-presentation of peptide fluM58. In the competition assay, test peptides at 100-200 $\mu\text{g/ml}$ were added to cultures of D150M58 CTL in order to bind HLA-A2 on the CTL. After thirty minutes, CTL cultured with test peptides, or control peptides, were tested for their antigen dose response to the fluM58 peptide in a standard TNF bioassay. As shown in Figure 3, peptide P1S#10 competes HLA-A2 restricted presentation of fluM58, demonstrating that peptide P1S#10 binds HLA-A2.

Mice expressing the transgene for human HLA A2.1 were immunized as described by Theobald *et al.* (*Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995) with the following modifications. Mice were immunized with 62.5 μg of P1S #10 and 120 μg of an I-A^b binding peptide derived from Hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and single cell suspensions prepared using a nylon mesh. Cells were then resuspended at 6×10^6 cells/ml in complete media (as described above) and cultured in the presence of irradiated (3000 rads) P1S#10-pulsed (2 $\mu\text{g/ml}$ P1S#10 and 10mg/ml β 2-microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of 7 $\mu\text{g/ml}$ dextran sulfate and 25 $\mu\text{g/ml}$ LPS for 3 days). Six days later cells ($5 \times 10^5/\text{ml}$) were restimulated with $2.5 \times 10^6/\text{ml}$ peptide-pulsed irradiated (20,000 rads) EL4A2Kb cells, as described above, and $3 \times 10^6/\text{ml}$ A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20 U/ml IL-2. Cells were restimulated on a weekly

basis in preparation for cloning. After three rounds of *in vitro* stimulations, one line was generated that recognized P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat targets as shown in Figure 4.

A P1S#10-specific CTL line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb tumor cells (1×10^4 cells/ well) as stimulators and A2 transgenic spleen cells as feeders (5×10^5 cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were restimulated as before. On day 21, viable clones were isolated and maintained in culture. As shown in Figure 5, five of these clones demonstrated specific cytolytic reactivity against P501S-transduced Jurkat A2Kb targets. This data indicates that P1S#10 represents a naturally processed epitope of the P501S protein that is expressed in the context of the human HLA-A2.1 molecule.

EXAMPLE 7

ABILITY OF HUMAN T CELLS TO RECOGNIZE PROSTATE TUMOR POLYPEPTIDES

This Example illustrates the ability of T cells specific for a prostate tumor polypeptide to recognize human tumor.

Human CD8⁺ T cells were primed *in vitro* to the P2S-12 peptide (SEQ ID NO: 306) derived from P502S (also referred to as J1-17) using dendritic cells according to the protocol of Van Tsai et al. (*Critical Reviews in Immunology* 18:65-75, 1998). The resulting CD8⁺ T cell microcultures were tested for their ability to recognize the P2S-12 peptide presented by autologous fibroblasts or fibroblasts which were transduced to express the P502S gene in a γ -interferon ELISPOT assay (see Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). Briefly, titrating numbers of T cells were assayed in duplicate on 10^4 fibroblasts in the presence of 3 μ g/ml human β_2 -microglobulin and 1 μ g/ml P2S-12 peptide or control E75 peptide. In addition, T cells were simultaneously assayed on autologous fibroblasts transduced with the P502S gene or as a control, fibroblasts transduced with HER-2/*neu*. Prior to the assay, the fibroblasts were treated with 10 ng/ml γ -interferon for 48 hours to upregulate class I MHC expression. One of the microcultures (#5) demonstrated strong recognition of both peptide pulsed fibroblasts as well as transduced fibroblasts in a γ -interferon ELISPOT assay. Figure 2A demonstrates that there was a strong increase in the number of γ -interferon spots with increasing numbers of T cells on fibroblasts pulsed with the P2S-12 peptide (solid bars) but not with the control E75 peptide (open bars). This shows the ability of these T cells to specifically recognize the P2S-12 peptide. As shown in Figure 2B, this microculture also demonstrated an increase in the number of γ -interferon spots with increasing numbers of T

cells on fibroblasts transduced to express the P502S gene but not the HER-2/*neu* gene. These results provide additional confirmatory evidence that the P2S-12 peptide is a naturally processed epitope of the P502S protein. Furthermore, this also demonstrates that there exists in the human T cell repertoire, high affinity T cells which are capable of recognizing this epitope. These T cells should also be capable of recognizing human tumors which express the P502S gene.

EXAMPLE 8

PRIMING OF CTL *IN VIVO* USING NAKED DNA IMMUNIZATION WITH A PROSTATE ANTIGEN

The prostate tumor antigen L1-12, as described above, is also referred to as P501S. HLA A2Kb Tg mice (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with 100 µg VR10132-P501S either intramuscularly or intradermally. The mice were immunized three times, with a two week interval between immunizations. Two weeks after the last immunization, immune spleen cells were cultured with Jurkat A2Kb-P501S transduced stimulator cells. CTL lines were stimulated weekly. After two weeks of *in vitro* stimulation, CTL activity was assessed against P501S transduced targets. Two out of 8 mice developed strong anti-P501S CTL responses. These results demonstrate that P501S contains at least one naturally processed A2-restricted CTL epitope.

EXAMPLE 9

GENERATION OF HUMAN CTL *IN VITRO* USING WHOLE GENE PRIMING AND STIMULATION TECHNIQUES WITH PROSTATE TUMOR ANTIGEN

Using *in vitro* whole-gene priming with P501S-retrovirally transduced autologous fibroblasts (see, for example, Yee et al, *The Journal of Immunology*, 157(9):4079-86, 1996), human CTL lines were derived that specifically recognize autologous fibroblasts transduced with P501S (also known as L1-12), as determined by interferon-γ ELISPOT analysis as described above. Using a panel of HLA-mismatched fibroblast lines transduced with P501S, these CTL lines were shown to be restricted HLA-A2 class I allele. Specifically, dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal human donors by growing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, DC were infected overnight with recombinant P501S vaccinia virus at a multiplicity of infection (M.O.I) of five, and matured overnight by the addition of 3 µg/ml CD40 ligand. Virus was inactivated by UV irradiation. CD8+ T cells were isolated using a magnetic bead system, and

priming cultures were initiated using standard culture techniques. Cultures were restimulated every 7-10 days using autologous primary fibroblasts retrovirally transduced with P501S. Following four stimulation cycles, CD8+ T cell lines were identified that specifically produced interferon- γ when stimulated with P501S-transduced autologous fibroblasts. The P501S-specific activity could be sustained by the continued stimulation of the cultures with P501S-transduced fibroblasts in the presence of IL-15. A panel of HLA-mismatched fibroblast lines transduced with P501S were generated to define the restriction allele of the response. By measuring interferon- γ in an ELISPOT assay, the P501S specific response was shown to be restricted by HLA-A2. These results demonstrate that a CD8+ CTL response to P501S can be elicited.

EXAMPLE 10

IDENTIFICATION OF A NATURALLY PROCESSED CTL EPITOPE CONTAINED WITHIN A PROSTATE TUMOR ANTIGEN

The 9-mer peptide p5 (SEQ ID NO: 338) was derived from the P703P antigen (also referred to as P20). The p5 peptide is immunogenic in human HLA-A2 donors and is a naturally processed epitope. Antigen specific CD8+ T cells can be primed following repeated *in vitro* stimulations with monocytes pulsed with p5 peptide. These CTL specifically recognize p5-pulsed target cells in both ELISPOT (as described above) and chromium release assays. Additionally, immunization of HLA-A2 transgenic mice with p5 leads to the generation of CTL lines which recognize a variety of P703P transduced target cells expressing either HLA-A2Kb or HLA-A2. Specifically, HLA-A2 transgenic mice were immunized subcutaneously in the footpad with 100 μ g of p5 peptide together with 140 μ g of hepatitis B virus core peptide (a Th peptide) in Freund's incomplete adjuvant. Three weeks post immunization, spleen cells from immunized mice were stimulated *in vitro* with peptide-pulsed LPS blasts. CTL activity was assessed by chromium release assay five days after primary *in vitro* stimulation. Retrovirally transduced cells expressing the control antigen P703P and HLA-A2Kb were used as targets. CTL lines that specifically recognized both p5-pulsed targets as well as P703P-expressing targets were identified.

Human *in vitro* priming experiments demonstrated that the p5 peptide is immunogenic in humans. Dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal human donors by culturing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, the DC were pulsed with p5 peptide and cultured with GM-CSF and IL-4 together with CD8+ T cell enriched PBMC. CTL lines were restimulated on a weekly basis

with p5-pulsed monocytes. Five to six weeks after initiation of the CTL cultures, CTL recognition of p5-pulsed target cells was demonstrated.

EXAMPLE 11

EXPRESSION OF A BREAST TUMOR-DERIVED ANTIGEN IN PROSTATE

Isolation of the antigen B305D from breast tumor by differential display is described in US Patent Application No. 08/700,014, filed August 20, 1996. Several different splice forms of this antigen were isolated. The determined cDNA sequences for these splice forms are provided in SEQ ID NO: 366-375, with the predicted amino acid sequences corresponding to the sequences of SEQ ID NO: 292, 298 and 301-303 being provided in SEQ ID NO: 299-306, respectively.

The expression levels of B305D in a variety of tumor and normal tissues were examined by real time PCR and by Northern analysis. The results indicated that B305D is highly expressed in breast tumor, prostate tumor, normal prostate tumor and normal testes, with expression being low or undetectable in all other tissues examined (colon tumor, lung tumor, ovary tumor, and normal bone marrow, colon, kidney, liver, lung, ovary, skin, small intestine, stomach).

EXAMPLE 12

ELICITATION OF PROSTATE TUMOR ANTIGEN-SPECIFIC CTL RESPONSES IN HUMAN BLOOD

This Example illustrates the ability of a prostate tumor antigen to elicit a CTL response in blood of normal humans.

Autologous dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal donors by growth for five days in RPMI medium containing 10% human serum, 50 ng/ml GM-CSF and 30 ng/ml IL-4. Following culture, DC were infected overnight with recombinant P501S-expressing vaccinia virus at an M.O.I. of 5 and matured for 8 hours by the addition of 2 micrograms/ml CD40 ligand. Virus was inactivated by UV irradiation, CD8⁺ cells were isolated by positive selection using magnetic beads, and priming cultures were initiated in 24-well plates. Following five stimulation cycles, CD8⁺ lines were identified that specifically produced interferon-gamma when stimulated with autologous P501S-transduced fibroblasts. The P501S-specific activity of cell line 3A-1 could be maintained following additional stimulation cycles on autologous B-LCL transduced with P501S. Line 3A-1 was shown to specifically recognize autologous B-LCL transduced to

express P501S, but not EGFP-transduced autologous B-LCL, as measured by cytotoxicity assays (^{51}Cr release) and interferon-gamma production (Interferon-gamma Elispot; *see above* and Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). The results of these assays are presented in Figures 6A and 6B.

EXAMPLE 13

IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY MICROARRAY ANALYSIS

This Example describes the isolation of certain prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 372 clones were identified, and 319 were successfully sequenced. Table I presents a summary of these clones, which are shown in SEQ ID NOs:385-400. Of these sequences SEQ ID NOs:386, 389, 390 and 392 correspond to novel genes, and SEQ ID NOs: 393 and 396 correspond to previously identified sequences. The others (SEQ ID NOs:385, 387, 388, 391, 394, 395 and 397-400) correspond to known sequences, as shown in Table I.

Table I
Summary of Prostate Tumor Antigens

Known Genes	Previously identified Genes	Novel Genes
T-cell gamma chain	P504S	23379 (SEQ ID NO:389)
Kallikrein	P1000C	23399 (SEQ ID NO:392)
Vector	P501S	23320 (SEQ ID NO:386)
CGI-82 protein mRNA (23319; SEQ ID NO:385)	P503S	23381 (SEQ ID NO:390)
PSA	P510S	
Ald. 6 Dehyd.	P784P	
L-iditol-2 dehydrogenase (23376; SEQ ID NO:388)	P502S	
Ets transcription factor PDEF (22672; SEQ ID NO:398)	P706P	
hTGR (22678; SEQ ID NO:399)	19142.2, bangur.seq (22621; SEQ ID NO:396)	
KIAA0295(22685; SEQ ID NO:400)	5566.1 Wang(23404; SEQ ID NO:393)	
Prostatic Acid Phosphatase(22655; SEQ ID NO:397)	P712P	

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transglutaminase (22611; SEQ ID NO:395)	P778P	
HDLBP (23508; SEQ ID NO:394)		
CGI-69 Protein(23367; SEQ ID NO:387)		
KIAA0122(23383; SEQ ID NO:391)		
TEEG		

CGI-82 showed 4.06 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 43% of prostate tumors, 25% normal prostate, not detected in other normal tissues tested. L-iditol-2 dehydrogenase showed 4.94 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 90% of prostate tumors, 100% of normal prostate, and not detected in other normal tissues tested. Ets transcription factor PDEF showed 5.55 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% prostate tumors, 25% normal prostate and not detected in other normal tissues tested. hTGR1 showed 9.11 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 63% of prostate tumors and is not detected in normal tissues tested including normal prostate. KIAA0295 showed 5.59 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% of prostate tumors, low to undetectable in normal tissues tested including normal prostate tissues. Prostatic acid phosphatase showed 9.14 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 67% of prostate tumors, 50% of normal prostate, and not detected in other normal tissues tested. Transglutaminase showed 14.84 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 30% of prostate tumors, 50% of normal prostate, and is not detected in other normal tissues tested. High density lipoprotein binding protein (HDLBP) showed 28.06 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% of normal prostate, and is undetectable in all other normal tissues tested. CGI-69 showed 3.56 fold over-expression in prostate tissues as compared to other normal tissues tested. It is a low abundant gene, detected in more than 90% of prostate tumors, and in 75% normal prostate tissues. The expression of this gene in normal tissues was very low. KIAA0122 showed 4.24 fold over-expression in prostate

tissues as compared to other normal tissues tested. It was over-expressed in 57% of prostate tumors, it was undetectable in all normal tissues tested including normal prostate tissues. 19142.2 bangur showed 23.25 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors and 100% of normal prostate. It was undetectable in other normal tissues tested. 5566.1 Wang showed 3.31 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% normal prostate and was also over-expressed in normal bone marrow, pancreas, and activated PBMC. Novel clone 23379 showed 4.86 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in 97% of prostate tumors and 75% normal prostate and is undetectable in all other normal tissues tested. Novel clone 23399 showed 4.09 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 27% of prostate tumors and was undetectable in all normal tissues tested including normal prostate tissues. Novel clone 23320 showed 3.15 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in all prostate tumors and 50% of normal prostate tissues. It was also expressed in normal colon and trachea. Other normal tissues do not express this gene at high level.

EXAMPLE 14

IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY ELECTRONIC SUBTRACTION

This Example describes the use of an electronic subtraction technique to identify prostate tumor antigens.

Potential prostate-specific genes present in the GenBank human EST database were identified by electronic subtraction (similar to that described by Vasmatizis et al., *Proc. Natl. Acad. Sci. USA* 95:300-304, 1998). The sequences of EST clones (43,482) derived from various prostate libraries were obtained from the GenBank public human EST database. Each prostate EST sequence was used as a query sequence in a BLASTN (National Center for Biotechnology Information) search against the human EST database. All matches considered identical (length of matching sequence >100 base pairs, density of identical matches over this region > 70%) were grouped (aligned) together in a cluster. Clusters containing more than 200 ESTs were discarded since they probably represented repetitive elements or highly expressed genes such as those for ribosomal proteins. If two or more clusters shared common ESTs, those clusters were grouped together into a "supercluster," resulting in 4,345 prostate superclusters.

Records for the 479 human cDNA libraries represented in the GenBank release were downloaded to create a database of these cDNA library records. These 479 cDNA libraries were grouped into three groups, Plus (normal prostate and prostate tumor libraries, and breast cell lines, in which expression was desired), Minus (libraries from other normal adult tissues, in which expression was not desirable), and Other (fetal tissue, infant tissue, tissues found only in women, non-prostate tumors and cell lines other than prostate cell lines, in which expression was considered to be irrelevant). A summary of these library groups is presented in Table II.

Table II
Prostate cDNA Libraries and ESTs

Library	# of Libraries	# of ESTs
Plus	25	43,482
Normal	11	18,875
Tumor	11	21,769
Cell lines	3	2,838
Minus	166	
Other	287	

Each supercluster was analyzed in terms of the ESTs within the supercluster. The tissue source of each EST clone was noted and used to classify the superclusters into four groups: Type 1- EST clones found in the Plus group libraries only; no expression detected in Minus or Other group libraries; Type 2- EST clones found in the Plus and Other group libraries only; no expression detected in the Minus group; Type 3- EST clones found in the Plus, Minus and Other group libraries, but the expression in the Plus group is higher than in either the Minus or Other groups; and Type 4- EST clones found in Plus, Minus and Other group libraries, but the expression in the Plus group is higher than the expression in the Minus group. This analysis identified 4,345 breast clusters (*see* Table III). From these clusters, 3,172 EST clones were ordered from Research Genetics, Inc., and were received as frozen glycerol stocks in 96-well plates.

Table III
Prostate Cluster Summary

Type	# of Superclusters	# of ESTs Ordered
1	688	677
2	2899	2484
3	85	11
4	673	0
Total	4345	3172

The inserts were PCR-amplified using amino-linked PCR primers for Synteni microarray analysis. When more than one PCR product was obtained for a particular clone, that PCR product was not used for expression analysis. In total, 2,528 clones from the electronic subtraction method were analyzed by microarray analysis to identify electronic subtraction breast clones that had high tumor vs. normal tissue mRNA. Such screens were performed using a Synteni (Palo Alto, CA) microarray, according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Within these analyses, the clones were arrayed on the chip, which was then probed with fluorescent probes generated from normal and tumor prostate cDNA, as well as various other normal tissues. The slides were scanned and the fluorescence intensity was measured.

Clones with an expression ratio greater than 3 (*i.e.*, the level in prostate tumor cDNA was at least three times the level in normal prostate cDNA) were identified as prostate tumor-specific sequences (Table IV). The sequences of these clones are provided in SEQ ID NOs:401-453, with certain novel sequences shown in SEQ ID NOs:407, 413, 416-419, 422, 426, 427 and 450.

Table IV
Prostate-tumor Specific Clones

SEQ ID NO.	Sequence Designation	Comments
401	22545	previously identified P1000C
402	22547	previously identified P704P

403	22548	known
404	22550	known
405	22551	PSA
406	22552	prostate secretory protein 94
407	22553	novel
408	22558	previously identified P509S
409	22562	glandular kallikrein
410	22565	previously identified P1000C
411	22567	PAP
412	22568	B1006C (breast tumor antigen)
413	22570	novel
414	22571	PSA
415	22572	previously identified P706P
416	22573	novel
417	22574	novel
418	22575	novel
419	22580	novel
420	22581	PAP
421	22582	prostatic secretory protein 94
422	22583	novel
423	22584	prostatic secretory protein 94
424	22585	prostatic secretory protein 94
425	22586	known
426	22587	novel
427	22588	novel
428	22589	PAP
429	22590	known
430	22591	PSA
431	22592	known
432	22593	Previously identified P777P
433	22594	T cell receptor gamma chain
434	22595	Previously identified P705P
435	22596	Previously identified P707P
436	22847	PAP
437	22848	known
438	22849	prostatic secretory protein 57

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439	22851	PAP
440	22852	PAP
441	22853	PAP
442	22854	previously identified P509S
443	22855	previously identified P705P
444	22856	previously identified P774P
445	22857	PSA
446	23601	previously identified P777P
447	23602	PSA
448	23605	PSA
449	23606	PSA
450	23612	novel
451	23614	PSA
452	23618	previously identified P1000C
453	23622	previously identified P705P

EXAMPLE 15

FURTHER IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY MICROARRAY ANALYSIS

This Example describes the isolation of additional prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 142 clones were identified and sequenced. Certain of these clones are shown in SEQ ID NOs:454-467. Of these sequences SEQ ID NOs:459-461 correspond to novel genes. The others (SEQ ID NOs:454-458 and 461-467) correspond to known sequences.

EXAMPLE 16

FURTHER CHARACTERIZATION OF PROSTATE TUMOR ANTIGEN P710P

This Example describes the full length cloning of P710P.

The prostate cDNA library described above was screened with the P710P fragment described above. One million colonies were plated on LB/Ampicillin plates. Nylon membrane filters were used to lift these colonies, and the cDNAs picked up by these filters were then denatured and cross-linked to the filters by UV light. The P710P fragment was radiolabeled and used to hybridize with the filters. Positive cDNA clones were selected and their cDNAs recovered and sequenced by an automatic ABI Sequencer. Four sequences were obtained, and are presented in SEQ ID NOs:468-471.

From the foregoing, it will be appreciated that, although specific embodiments of the invention have been described herein for the purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the present invention is not limited except as by the appended claims.

CLAIMS

1. An isolated polypeptide comprising at least an immunogenic portion of a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472;

(b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and

(c) complements of any of the sequence of (a) or (b).

2. An isolated polypeptide according to claim 1, wherein the polypeptide comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing polynucleotide sequences.

3. An isolated polypeptide comprising a sequence recited in any one of SEQ ID NO: 108, 112, 113, 114, 172, 176, 178, 327, 329, 331, 339 and 383.

4. An isolated polynucleotide encoding at least 15 amino acid residues of a prostate tumor protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434,

435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing sequences.

5. An isolated polynucleotide encoding a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing sequences.

6. An isolated polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

7. An isolated polynucleotide comprising a sequence that hybridizes, under moderately stringent conditions, to a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

8. An isolated polynucleotide complementary to a polynucleotide according to any one of claims 4-7.

9. An expression vector comprising a polynucleotide according to any one of claims 4-7.

10. A host cell transformed or transfected with an expression vector according to claim 9.

11. An expression vector comprising a polynucleotide according claim 8.

12. A host cell transformed or transfected with an expression vector according to claim 11.

13. A pharmaceutical composition comprising a polypeptide according to claim 1, in combination with a physiologically acceptable carrier.

14. A vaccine comprising a polypeptide according to claim 1, in combination with a non-specific immune response enhancer.

15. A vaccine according to claim 14, wherein the non-specific immune response enhancer is an adjuvant.

16. A vaccine according to claim 14, wherein the non-specific immune response enhancer induces a predominantly Type I response.

17. A pharmaceutical composition comprising a polynucleotide according to claim 4, in combination with a physiologically acceptable carrier.

18. A vaccine comprising a polynucleotide according to claim 4, in combination with a non-specific immune response enhancer.

19. A vaccine according to claim 18, wherein the non-specific immune response enhancer is an adjuvant.

20. A vaccine according to claim 18, wherein the non-specific immune response enhancer induces a predominantly Type I response.

21. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a prostate tumor protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472 or a complement of any of the foregoing polynucleotide sequences.

22. A pharmaceutical composition comprising an antibody or fragment thereof according to claim 18, in combination with a physiologically acceptable carrier.
23. A pharmaceutical composition comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a pharmaceutically acceptable carrier or excipient.
24. A pharmaceutical composition according to claim 23, wherein the antigen presenting cell is a dendritic cell or a macrophage.
25. A vaccine comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a non-specific immune response enhancer.
26. A vaccine according to claim 25, wherein the non-specific immune response enhancer is an adjuvant.
27. A vaccine according to claim 25, wherein the non-specific immune response enhancer induces a predominantly Type I response.
28. A vaccine according to claim 25, wherein the antigen-presenting cell is a dendritic cell.
29. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a polypeptide according to claim 1, and thereby inhibiting the development of a cancer in the patient.
30. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a polynucleotide according to claim 4, and thereby inhibiting the development of a cancer in the patient.
31. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antibody or antigen-binding fragment thereof according to claim 21, and thereby inhibiting the development of a cancer in the patient.

32. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antigen-presenting cell that expresses a polypeptide according to claim 1, and thereby inhibiting the development of a cancer in the patient.
33. A method according to claim 32, wherein the antigen-presenting cell is a dendritic cell.
34. A method according to any one of claims 29-32, wherein the cancer is prostate cancer.
35. A fusion protein comprising at least one polypeptide according to claim 1.
36. A fusion protein according to claim 35, wherein the fusion protein comprises an expression enhancer that increases expression of the fusion protein in a host cell transfected with a polynucleotide encoding the fusion protein.
37. A fusion protein according to claim 35, wherein the fusion protein comprises a T helper epitope that is not present within the polypeptide of claim 1.
38. A fusion protein according to claim 35, wherein the fusion protein comprises an affinity tag.
39. An isolated polynucleotide encoding a fusion protein according to claim 35.
40. A pharmaceutical composition comprising a fusion protein according to claim 32, in combination with a physiologically acceptable carrier.
41. A vaccine comprising a fusion protein according to claim 35, in combination with a non-specific immune response enhancer.
42. A vaccine according to claim 41, wherein the non-specific immune response enhancer is an adjuvant.

43. A vaccine according to claim 41, wherein the non-specific immune response enhancer induces a predominantly Type I response.

44. A pharmaceutical composition comprising a polynucleotide according to claim 40, in combination with a physiologically acceptable carrier.

45. A vaccine comprising a polynucleotide according to claim 40, in combination with a non-specific immune response enhancer.

46. A vaccine according to claim 45, wherein the non-specific immune response enhancer is an adjuvant.

47. A vaccine according to claim 45, wherein the non-specific immune response enhancer induces a predominantly Type I response.

48. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 40 or claim 44.

49. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a vaccine according to claim 41 or claim 45.

50. A method for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; and

(ii) complements of the foregoing polynucleotides;
wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the prostate tumor protein from the sample.

51. A method according to claim 50, wherein the biological sample is blood or a fraction thereof.

52. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated according to the method of claim 50.

53. A method for stimulating and/or expanding T cells specific for a prostate tumor protein, comprising contacting T cells with one or more of:

- (i) a polypeptide according to claim 1;
 - (ii) a polypeptide encoded by a polynucleotide comprising a sequence provided in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;
 - (iii) a polynucleotide encoding a polypeptide of (i) or (ii); and/or
 - (iv) an antigen presenting cell that expresses a polypeptide of (i) or (ii);
- under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

54. An isolated T cell population, comprising T cells prepared according to the method of claim 53.

55. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population according to claim 54.

56. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

- (a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with at least one component selected from the group consisting of:
 - (i) a polypeptide according to claim 1;
 - (ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;
 - (iii) a polynucleotide encoding a polypeptide of (i) or (ii); or
 - (iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate; and

- (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

57. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with at least one component selected from the group consisting of:

- (i) a polypeptide according to claim 1;
- (ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NOs: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;
- (iii) a polynucleotide encoding a polypeptide of (i) or (ii); or
- (iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate;

- (b) cloning at least one proliferated cell; and
- (c) administering to the patient an effective amount of the cloned T cells, and thereby inhibiting the development of a cancer in the patient.

58. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with a binding agent that binds to a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; and

(ii) complements of the foregoing polynucleotides;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent; and

(c) comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

59. A method according to claim 58, wherein the binding agent is an antibody.

60. A method according to claim 59, wherein the antibody is a monoclonal antibody.

61. A method according to claim 58, wherein the cancer is prostate cancer.
62. A method for monitoring the progression of a cancer in a patient, comprising the steps of:
- (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;
 - (b) detecting in the sample an amount of polypeptide that binds to the binding agent;
 - (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and
 - (d) comparing the amount of polypeptide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.
63. A method according to claim 62, wherein the binding agent is an antibody.
64. A method according to claim 63, wherein the antibody is a monoclonal antibody.
65. A method according to claim 62, wherein the cancer is a prostate cancer.
66. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:
- (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;
 - (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(c) comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

67. A method according to claim 66, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

68. A method according to claim 66, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

69. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

70. A method according to claim 69, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

71. A method according to claim 69, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

72. A diagnostic kit, comprising:

(a) one or more antibodies according to claim 21; and

(b) a detection reagent comprising a reporter group.

73. A kit according to claim 72, wherein the antibodies are immobilized on a solid support.

74. A kit according to claim 73, wherein the solid support comprises nitrocellulose, latex or a plastic material.

75. A kit according to claim 72, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.

76. A kit according to claim 72, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent groups, enzymes, biotin and dye particles.

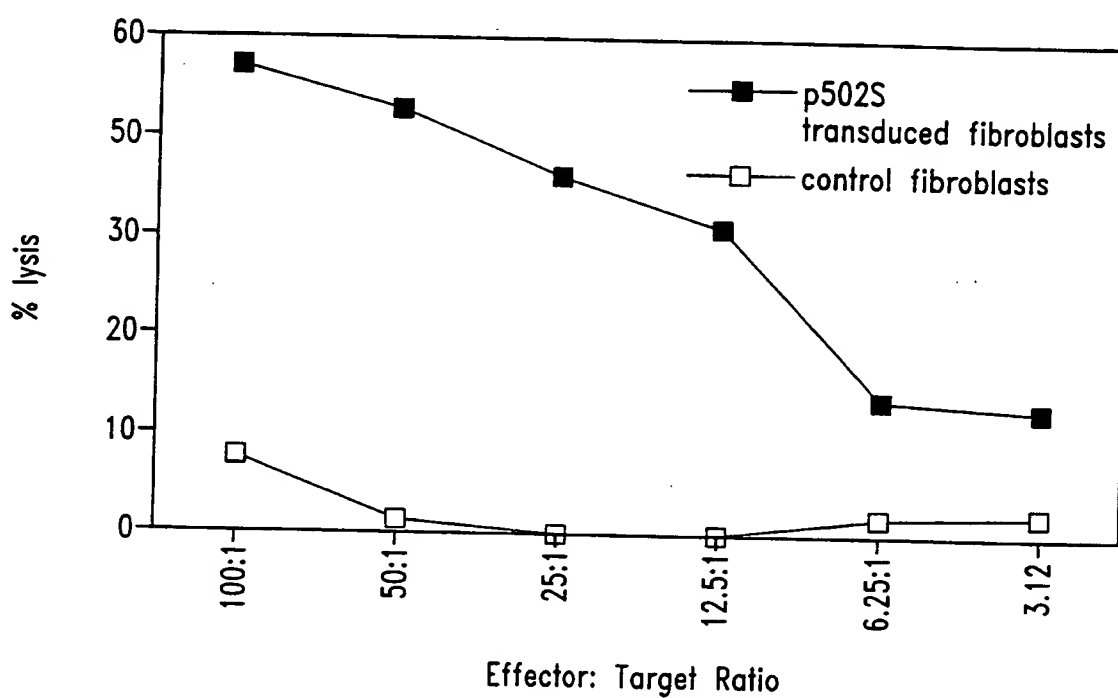
77. An oligonucleotide comprising 10 to 40 nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing polynucleotides.

78. A oligonucleotide according to claim 77, wherein the oligonucleotide comprises 10-40 nucleotides recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

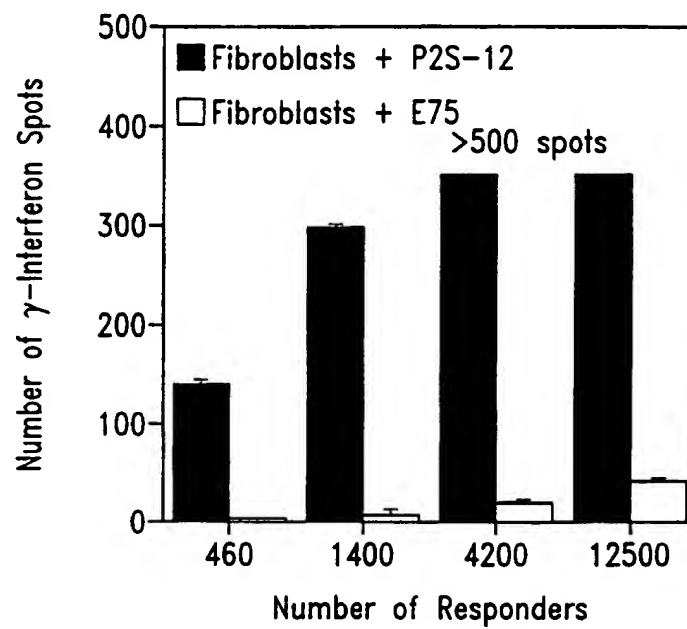
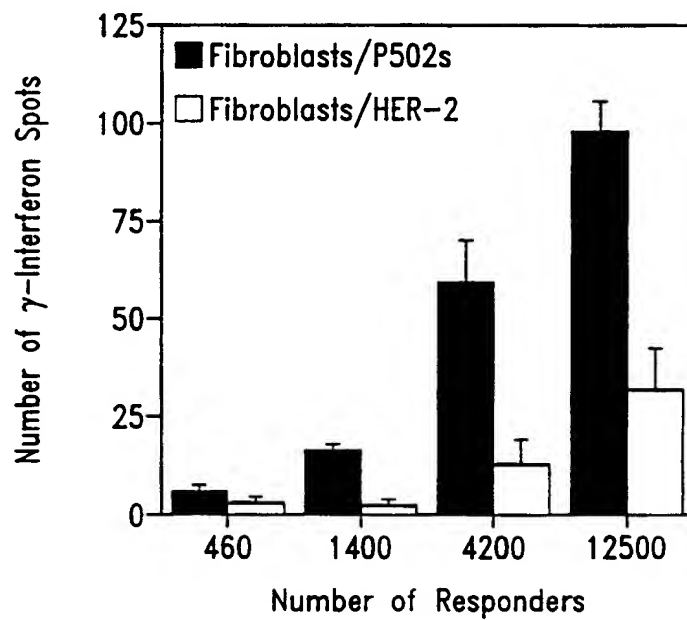
79. A diagnostic kit, comprising:

- (a) an oligonucleotide according to claim 77; and
- (b) a diagnostic reagent for use in a polymerase chain reaction or hybridization assay.

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*Fig. 1*

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*Fig. 2A**Fig. 2B*

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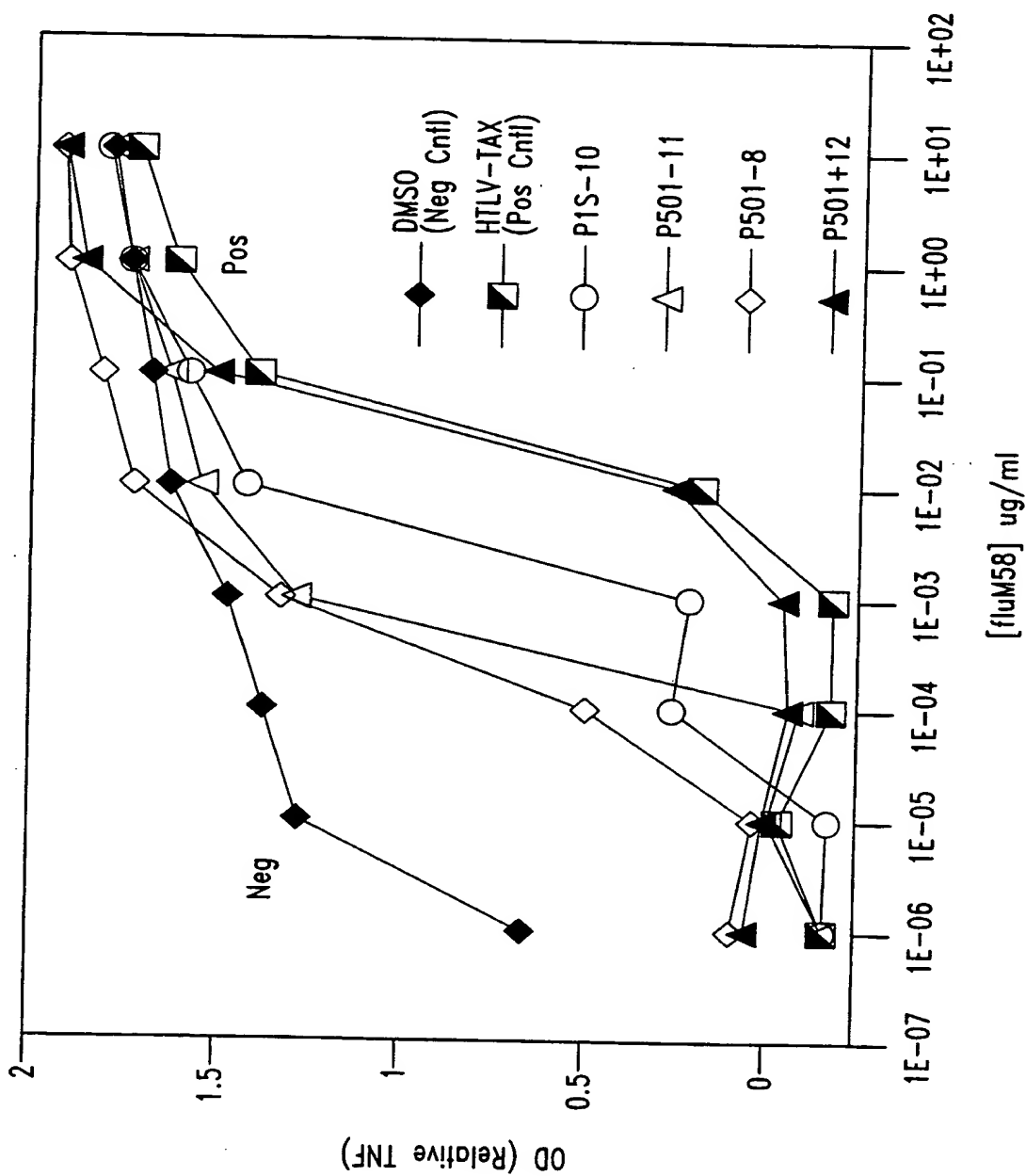
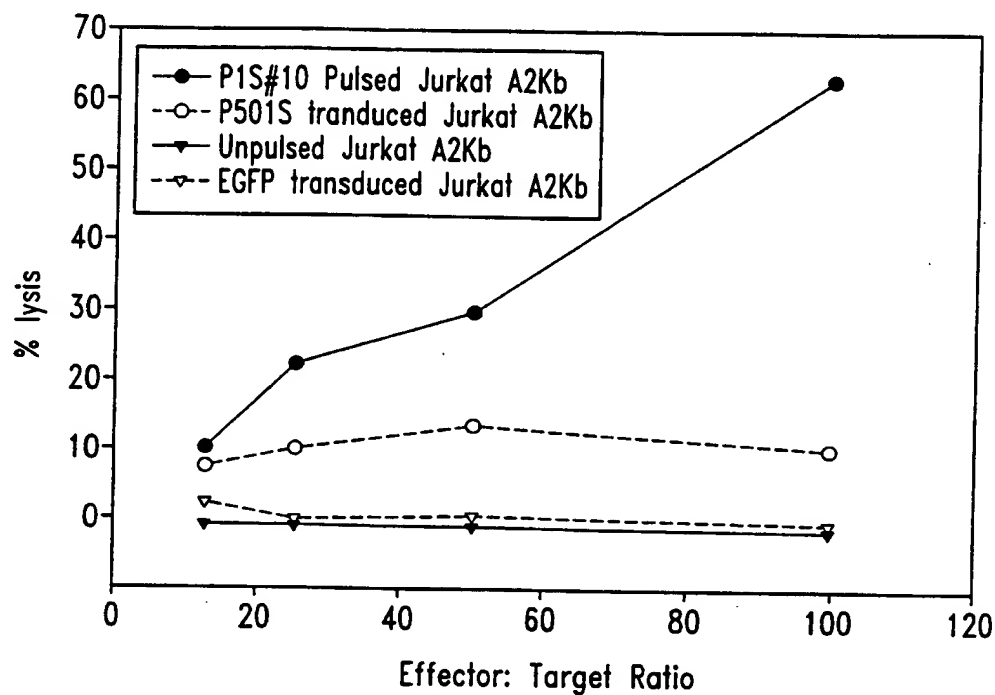
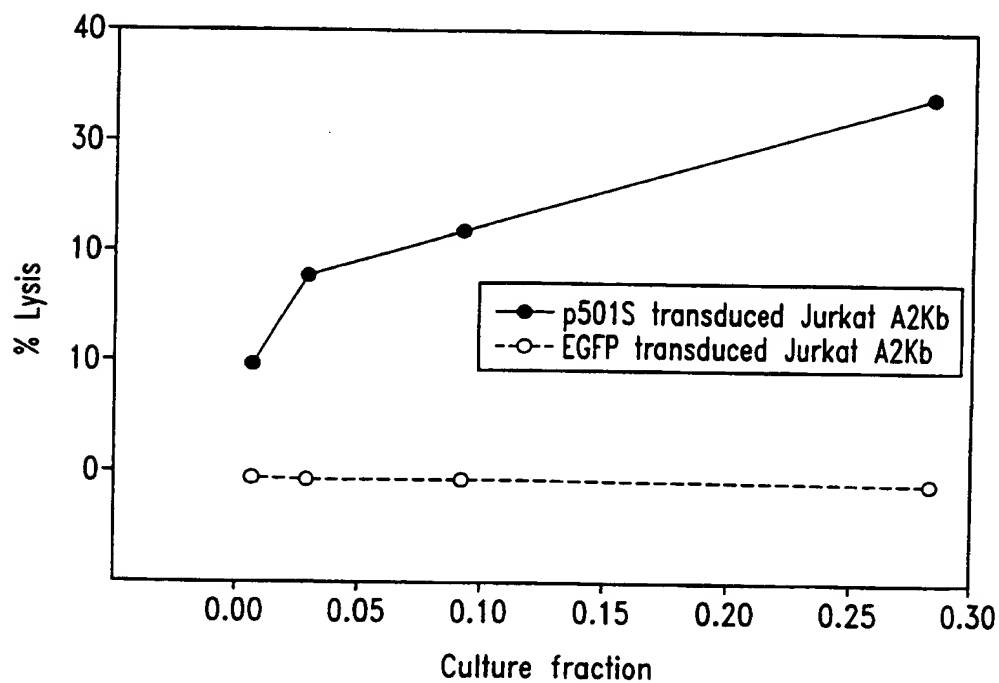


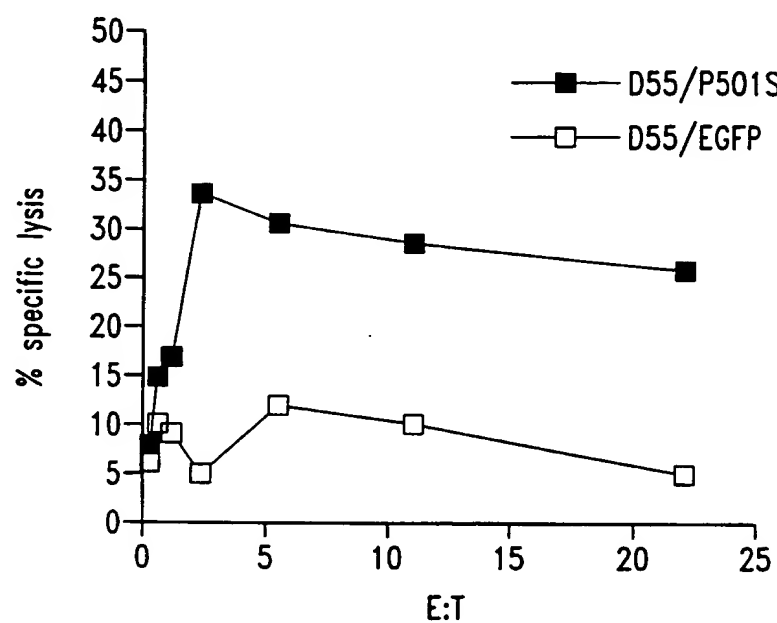
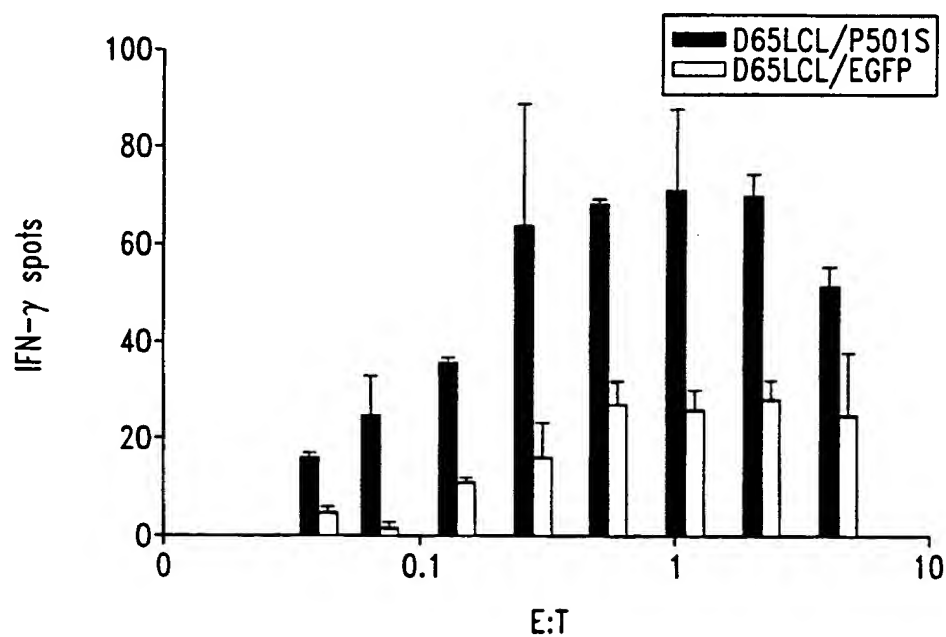
Fig. 3

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*Fig. 4**Fig. 5*

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*Fig. 6**Fig. 7*

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SEQUENCE LISTING

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OF PROSTATE CANCER AND METHODS FOR THEIR USE

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gaatgggnaa	atgggacccc	cctgttaccg	cgcattnaac	ccccgcnggg	tttngttgtt	660
acccccacnt	nnaccgctta	cacttttgcc	gcgccttanc	gcccgcctcc	tttcnccctt	720
cttcccttcc	tttcnncn	ctttcccccg	gggtttcccc	cntcaaacce	cna	773

<210> 4

<211> 828

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(828)

<223> n = A,T,C or G

<400> 4

cctcctgagt	cctactgacc	tgtgctttct	ggtgtggagt	ccagggctgc	taggaaaagg	60
aatgggcaga	cacaggtgta	tgccaatgtt	tctgaaatgg	gtataatttc	gtcctctcct	120
tcggaacact	ggctgtctct	gaagacttct	cgctcagttt	cagtgaggac	acacacaaag	180
acgtgggtga	ccatgttggt	tgtgggggtg	agagatggga	gggggtgggg	ccaccctgga	240
agagtggaca	gtgacacaag	gtggacactc	tctacagatc	actgaggata	agctggagcc	300
acaatgcatg	aggcacacac	acagcaagga	tgacnctgta	aacatagccc	acgctgtcct	360

gnngggcactg	ggaagcctan	atnaggccgt	gagcanaaag	aaggggagga	tccactagtt	420
ctanagcggc	cgccaccgcg	gtgganctcc	ancctttgtt	cccttttagtg	agggttaatt	480
gcgcgcttgg	cntaatcatg	gtcatanctn	tttctgtgtg	gaaattgtta	tccgctcaca	540
attccacaca	acatacganc	cggaaacata	aantgtaaac	ctgggggtgcc	taatgantga	600
ctaactcaca	ttaattgcgt	tgcgctcact	gcccgccttc	caatcnggaa	acctgtcttg	660
ccncttgcgt	tnatgaatcn	gccaaacccc	ggggaaaagc	gtttgcgttt	tgggcgctct	720
tccgcttcc	cncctantta	ntccctncnc	tcggtcatc	cggctgcngc	aaaccgggtc	780
accnctcca	aaggggggtat	tccggtttcc	ccnaatccg	gganancc		828

<210> 5
 <211> 834
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(834)
 <223> n = A,T,C or G

<400> 5						
tttttttttt	tttttactga	tagatggaat	ttattaagct	tttcacatgt	gatagcacat	60
agttttaatt	gcatccaaag	tactaacaaa	aactctagca	atcaagaatg	gcagcatgtt	120
attttataac	aatcaacacc	tgtggctttt	aaaatttggg	tttcataaga	taattttatac	180
tgaagtaa	ctagccatgc	ttttaaaaaa	tgcttttaggt	cactccaagc	ttggcagtta	240
acatttggca	taaacaataa	taaaacaatc	acaattta	aaataacaaa	tacaacattg	300
tagggcataa	tcatatacag	tataaggaaa	aggtggtagt	gttgagtaag	cagttattag	360
aatagaatac	cttggcctct	atgcaaata	gtctagacac	tttgattcac	tcagccctga	420
cattcagttt	tcaaagtagg	agacagggtc	tacagtatca	ttttacagtt	tccaacacat	480
tgaaaacaag	tagaaaatga	tgagttgatt	tttattaatg	cattacatcc	tcaagagtta	540
tcaccaaccc	ctcagttata	aaaaattttc	aagttatatt	agtcataata	cttgggtgtgc	600
ttatttttaa	ttagtgttaa	atggattaag	tgaagacaac	aatgggtccc	taatgtgatt	660
gatattgggc	atttttacca	gcttctaaat	ctnaactttc	aggcttttga	actggaacat	720
tgnatnacag	tgttccanag	ttncaaccta	ctggaacatt	acagtgtgct	tgattcaaaa	780
tgttattttg	ttaaaaatta	aatttttaacc	tggtggaaaa	ataatttgaa	atna	834

<210> 6
 <211> 818
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(818)
 <223> n = A,T,C or G

<400> 6						
tttttttttt	tttttttttt	aagaccctca	tcaatagatg	gagacataca	gaaatagtca	60
aaccacatct	acaaaatgcc	agtatcaggc	ggcggtctcg	aagccaaagt	gatgtttgga	120
tgtaaagtga	aatattagtt	ggcggatgaa	gcagatagtg	aggaaagtgt	agccaataat	180
gacgtgaagt	ccgtggaagc	ctgtggctac	aaaaaatgtt	gagccgtaga	tgccgtcgga	240
aatggtgaag	ggagactcga	agtactctga	ggcttgtagg	agggtaaaat	agagaccag	300
taaaattgta	ataagcagtg	cttgaattat	ttggtttcgg	ttgttttcta	ttagactatg	360
gtgagctcag	gtgattgata	ctcctgatgc	gagtaatacg	gatgtgttta	ggagtgggac	420
ttctagggga	tttagcgggg	tgatgcctgt	tgggggcccag	tgccctccta	gttgggggggt	480
aggggctagg	ctggagtggg	aaaaggctca	gaaaaatcct	gcgaagaaaa	aaacttctga	540

ggtaataaat	aggattatcc	cgtatcgaag	gccttttttg	acaggtggtg	tgtggtggcc	600
ttggtatgtg	ctttctcgtg	ttacatcgcg	ccatcattgg	tatatgggta	gtgtgttggg	660
ttantanggc	ctantatgaa	gaacttttgg	antggaatta	aatcaatngc	ttggccggaa	720
gtcattanga	nggctnaaaa	ggccctgtta	nggggtctgg	ctnggtttta	cccnacccat	780
ggaatncncc	ccccggacna	ntgnatccct	attcttaa			818

<210> 7

<211> 817

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(817)

<223> n = A,T,C or G

<400> 7

tttttttttt	tttttttttt	tggctctaga	gggggtagag	ggggtgctat	agggtaaata	60
cgggccctat	ttcaaagatt	tttaggggaa	ttaattctag	gacgatgggt	atgaaactgt	120
ggtttgctcc	acagatttca	gagcattgac	cgtagtatac	ccccggtcgt	gtagcgggta	180
aagtggtttg	gttttagacgt	ccgggaattg	catctgtttt	taagcctaata	gtggggacag	240
ctcatgagtg	caagacgtct	tgtgatgtaa	ttattatacn	aatgggggct	tcaatcggga	300
gtactactcg	attgtcaacg	tcaaggagtc	gcaggtcgcc	tggttctagg	aataatgggg	360
gaagtatgta	ggaattgaag	attaatccgc	cgtagtcggt	gttctcctag	gttcaatacc	420
attggtggcc	aattgatttg	atggtaaggg	gagggatcgt	tgaactcgtc	tgttatgtaa	480
aggatncctt	ngggatggga	aggcnatnaa	ggactangga	tnaatggcgg	gcangatatt	540
tcaaacngtc	tctanttcct	gaaacgtctg	aaatgttaat	aanaattaan	tttngttatt	600
gaatnttnng	gaaaagggtc	tacaggacta	gaaaccaaata	angaaaanta	atnntaangg	660
cnttatcntn	aaaggtnata	accnctccta	tnatcccacc	caatngnatt	ccccacnenn	720
acnattggat	nceccanttc	canaaanggc	cncccccccg	tgnannccnc	cttttgttcc	780
cttnantgan	ggttattcnc	ccctngcntt	atcance			817

<210> 8

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(799)

<223> n = A,T,C or G

<400> 8

catttccggg	tttactttct	aaggaaagcc	gagcgggaagc	tgctaacgtg	ggaatcggtg	60
cataaggaga	actttctgct	ggcacgcgct	agggacaagc	gggagagcga	ctccgagcgt	120
ctgaagcgca	cgtcccagaa	ggtggacttg	gcaactgaaac	agctggggaca	catccgcgag	180
tacgaacagc	gcctgaaagt	gctggagcgg	gaggtccagc	agtgtagccg	cgctctgggg	240
tgggtggccg	angcctganc	cgtcttgccct	tgctgcccc	angtggggccg	cgctctgggg	300
acctgcctgg	gtccaaacac	tgagccctgc	tggcggactt	caagganaac	ccccacangg	360
ggattttgct	cctanantaa	ggctcatctg	ggcctcggcc	ccccacactg	gttggccttg	420
tctttgangt	gagccccatg	tccatctggg	ccactgtcng	gaccaccttt	ngggagtggt	480
ctccttacia	ccacannatg	cccggctcct	cccggaaacc	antcccance	tgngaaggat	540
caagnccctgn	atccactnnt	nctanaaccg	gccnccnccg	cngtggaacc	cnccttntgt	600
tccttttctnt	tnagggttaa	tnnccgcttg	gccttnccan	ngtcctnenc	nttttccnnt	660
gttnaaattg	ttangcnccc	nccnntcccn	cnnccnnan	cccgaaccnn	annttnnann	720

ncctgggggt nccnnngat tgaccenncc nccctntant tgcnttnggg ncnntgccc 780
ctttccctct nggganncg 799

<210> 9
<211> 801
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(801)
<223> n = A,T,C or G

<400> 9
acgccttgat cctcccaggc tgggactggt tctgggagga gccgggcatg ctgtgggttg 60
taangatgac actcccaaag gtggctcctga cagtggccca gatggacatg gggctcacct 120
caaggacaag gccaccaggt gcggggggccg aagcccacat gatccttact ctatgagcaa 180
aatccccctgt gggggcttct ccttgaagtc cgccancagg gctcagtctt tggaccang 240
caggtcatgg ggttgtngnc caactggggg ccncaacgca aaanggcncg gggcctcngn 300
caccatccc angacgcggc tacactnctg gacctccnc tccaccactt tcatgcgctg 360
ttcntaccg cgnatntgtc ccnctgttt cngtgccnac tccancttct nggacgtgcg 420
ctacatacgc ccggantcnc nctcccgtt tgtccctatc cacgtncan caacaaattt 480
cnccntantg caccnattcc cacntttnc agntttccnc nncgngcttc cttntaaaag 540
ggttganccc cggaaaatnc cccaaagggg gggggccngg taccactn cccctnata 600
gctgaantcc ccataaccnn gnetcnatgg anccntcct ttaannacn ttctnaactt 660
gggaananc ctcgnccntn ccccnntaa tccnccctg cnangnnct ccccnntcc 720
nccnnntng gcntntnann cnaaaaaggc ccnnnancaa tctcctnnn cctcanttcg 780
ccanccctcg aaatcgccn c 801

<210> 10
<211> 789
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(789)
<223> n = A,T,C or G

<400> 10
cagtctatnt ggccagtgtg gcagctttcc ctgtggctgc cgggtgccaca tgccctgtccc 60
acagtgtggc cgtgggtgaca gcttcagccg ccctcacccg gtacaccttc tcagccctgc 120
agatcctgcc ctacacactg gcctccctct accaccggga gaagcagggtg ttccctgccc 180
aataccgagg ggacactgga ggtgctagca gtgaggacag cctgatgacc agcttcctgc 240
cagggccctaa gcctggagct cccttcctta atggacacgt ggggtgctgga ggcagtggcc 300
tgctccccc tccaccgcg ctctgcgggg cctctgcctg tgatgtctcc gtacgtgtgg 360
tggtgggtga gccaccgan gccagggtgg ttccgggccc gggcatctgc ctggacctcg 420
ccatcctgga tagtgcttcc tgctgtccca ngtgggccca tccctgttta tgggctccat 480
tgtccagctc agccagtctg tcaactgccta tatgggtgtc gccgcaggcc tgggtctggg 540
cccatttact ttgctacaca ggtantattt gacaagaacg anttgccaa atactcagcg 600
ttaaaaaatt ccagcaacat tgggggtgga aggctgcct cactgggtcc aactccccgc 660
tcctgttaac cccatggggc tgccggcttg gccgccaatt tctgttgctg ccaaantnat 720
gtggctctct gctgccacct gttgctggct gaagtgcnta cngcncanct nggggggng 780
ggngttccc 801

<210> 11
 <211> 772
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(772)
 <223> n = A,T,C or G

<400> 11

cccaccctac	ccaaatatta	gacaccaaca	cagaaaagct	agcaatggat	tcccttctac	60
tttgttaaat	aaataagtta	aatattttaa	tgcctgtgtc	tctgtgatgg	caacagaagg	120
accaacaggc	cacatcctga	taaaaggtaa	gaggggggtg	gatcagcaaa	aagacagtgc	180
tgtgggctga	ggggacctgg	ttcttgtgtg	ttgccccctc	ggactcttcc	cctacaaata	240
actttcatat	gttcaaattc	catggaggag	tgtttcatcc	tagaaactcc	catgcaagag	300
ctacattaaa	cgaagtgcga	ggttaagggg	cttanagatg	ggaaaccagg	tgactgagtt	360
tattcagctc	ccaaaaaccc	ttctctaggt	gtgtctcaac	taggaggcta	gctgttaacc	420
ctgagcctgg	gtaatccacc	tgcagagtcc	ccgcattcca	gtgcatggaa	cccttctggc	480
ctccctgtat	aagtccagac	tgaaaccccc	ttggaaggnc	tccagtcagg	cagccctana	540
aactggggaa	aaaagaaaag	gacgccccan	ccccagctg	tgcanctacg	cacctcaaca	600
gcacagggtg	gcagcaaaaa	aaccacttta	ctttggcaca	aacaaaaact	ngggggggca	660
accccggcac	cccnangggg	gttaacagga	ancngggnaa	cntggaaccc	aattnaggca	720
ggcccncac	ccnaatntt	gctgggaaat	ttttcctccc	ctaaattntt	tc	772

<210> 12
 <211> 751
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(751)
 <223> n = A,T,C or G

<400> 12

gccccaatc	cagctgccac	accacccacg	gtgactgcat	tagttcggat	gtcatacaaa	60
agctgattga	agcaaccctc	tacttttttg	tcgtgagcct	tttgcttggt	gcaggtttca	120
ttggctgtgt	tggtgacgtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagtanggtg	agtcctcaaa	atccgtatag	ttggtgaagc	cacagcactt	gagccctttc	240
atggtgggtg	tccacacttg	agtgaagtct	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtcag	ggaagtgtc	agccattgtg	gtgtacacca	aggcgaccac	360
agcagctgcn	acctcagcaa	tgaagatgan	gaggangatg	aagaagaacg	tcncgagggc	420
acacttgctc	tcagtcttan	caccatanca	gcccntgaaa	accaananca	aagaccacna	480
cnccggctgc	gatgaagaaa	tnaccccneg	ttgacaaaact	tgcatggcac	tggganccac	540
agtggcccn	aaaatcttca	aaaaggatgc	cccatcnatt	gaccccccaa	atgcccactg	600
ccaacagggg	ctgccccacn	cncnnaacga	tgancnatt	gnacaagatc	tncntggtct	660
tnatnaacnt	gaaccctgcn	tngtggctcc	tgttcaggnc	cnnggcctga	cttctnaann	720
aangaactcn	gaagncccca	cngganann	g			751

<210> 13
 <211> 729
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(729)
 <223> n = A,T,C or G

<400> 13

gagccaggcg	tccctctgcc	tgcccactca	gtggcaacac	ccgggagctg	ttttgtcctt	60
tgtggancct	cagcagtncc	ctctttcaga	actcantgcc	aagancctg	aacaggagcc	120
accatgcagt	gcttcagctt	cattaagacc	atgatgatcc	tcttcaattt	gctcatcttt	180
ctgtgtggtg	cagccctggt	ggcagtgggc	atctgggtgt	caatcgatgg	ggcatccttt	240
ctgaagatct	tcgggccact	gtcgtccagt	gccatgcagt	ttgtcaacgt	gggctacttc	300
ctcatcgcat	ccggcggtgt	ggtcttagct	ctagggttcc	tgggctgcta	tggtgctaag	360
actgagagca	agtgtgccct	cgtgacgttc	ttcttcatcc	tctcctcat	cttcattgct	420
gaggttgcaa	tgtgtggtc	gccttggtgt	acaccacaat	ggctgagcac	ttcctgacgt	480
tgtgtgtaat	gcctgccatc	aanaaaagat	tatgggttcc	caggaanact	tactcaagt	540
gttggaacac	caccatgaaa	gggctcaagt	gctgtggctt	cnnccaacta	tacggatttt	600
gaagantcac	ctacttcaaa	gaaaanagtg	cctttccccc	atttctgttg	caattgacaa	660
acgtccccaa	cacagccaat	tgaaaacctg	cacccaaccc	aaanggggtcc	ccaaccanaa	720
attnaaggg						729

<210> 14
 <211> 816
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(816)
 <223> n = A,T,C or G

<400> 14

tgtcttctct	caaagttggt	cttgttgcca	taacaaccac	cataggtaaa	gcggggcgag	60
tgttcgctga	aggggttgta	gtaccagcgc	gggatgctct	ccttgcagag	tcctgtgtct	120
ggcaggtcca	cgagtgccc	tttgtactg	gggaaatgga	tgcgctggag	ctcgtcaaa	180
ccactcgtgt	atttttcaca	ggcagcctcg	tccgacgcgt	cggggcagtt	gggggtgtct	240
tcacactcca	ggaaactgtc	natgcagcag	ccattgctgc	agcggaaactg	ggtgggctga	300
cangtgccag	agcacactgg	atggcgccct	tccatgnnan	gggcccctgng	ggaaagtccc	360
tgancccan	anctgcctct	caaangcccc	accttgacac	ccccgacagg	ctagaatgga	420
atcttcttcc	cgaaaaggtag	ttnttcttgt	tgccc aancc	anccccntaa	acaaactctt	480
gcanatctgc	tccgnggggg	tcntantacc	ancgtgggaa	aagaacccca	ggcngcgaac	540
caancttggt	tggatncgaa	gcnataatct	nctnttctgc	ttgggtggaca	gcaccantna	600
ctgtnnanct	ttagnccntg	gtcctcntgg	gttgnncttg	aacctaatcn	ccnntcaact	660
gggacaagg	aantngccnt	cctttnaatt	cccnanctn	ccccctggtt	tgggggtttt	720
cncnctccta	ccccagaaan	nccgtgttcc	cccccaacta	ggggccnaaa	ccnnttnttc	780
cacaaccctn	ccccacccac	gggttcngnt	ggttng			816

<210> 15
 <211> 783
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(783)
 <223> n = A,T,C or G

<400> 15

ccaaggcctg	ggcaggcata	nacttgaagg	tacaacccca	ggaacccctg	gtgctgaagg	60
atgtggaaaa	cacagattgg	cgctactgc	gggtgacac	ggatgtcagg	gtagagagga	120
aagacccaaa	ccaggtggaa	ctgtggggac	tcaagggaang	cacctacctg	ttccagctga	180
cagtgactag	ctcagaccac	ccagaggaca	cggccaacgt	cacagtcaact	gtgctgtcca	240
ccaagcagac	agaagactac	tgctcgcac	ccaacaangt	gggtcgctgc	cggggctctt	300
ttccacgctg	gtactatgac	cccacggagc	agatctgcaa	gagtttcgtt	tatggaggct	360
gcttgggcaa	caagaacaac	taccttcggg	aagaagagt	cattctancc	tgtcnggggtg	420
tgcaagggtg	gcctttgana	ngcanctctg	gggctcangc	gactttcccc	caggggcccct	480
ccatggaaa	gcgccatcca	ntgttctctg	gcacctgtca	gcccacccag	ttccgctgca	540
ncaatggctg	ctgcacnac	antttcctng	aattgtgaca	acacccccca	ntgcccccaa	600
ccctcccaac	aaagcttccc	tgttnaaaaa	tacnccantt	ggcttttnac	aaacncccgg	660
cncctccntt	ttcccnntn	aacaaagggc	nctngcnttt	gaactgcccn	aaccnnggaa	720
tctnccnngg	aaaaantncc	ccccctgggt	cctnnaancc	cctccncaaa	antncccccc	780
ccc						783

<210> 16

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (801)

<223> n = A,T,C or G

<400> 16

gccccaatc	cagctgccac	accacccacg	gtgactgcat	tagttcggat	gtcatataaaa	60
agctgattga	agcaaccctc	tacttttttg	tcgtgagcct	tttgcttggt	gcagggtttca	120
ttggctgtgt	tggtgacgtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagtaggggtg	agtcctcaaa	atccgtatag	ttgggtgaagc	cacagcactt	gagccctttc	240
atgggtggtgt	tccacacttg	agtgaagtct	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtcag	gaagtgtctc	gccattgtgg	tgtacaccaa	ggcgaccaca	360
gcagctgcaa	cctcagcaat	gaagatgagg	aggaggatga	agaagaacgt	cncgagggca	420
cacttgctct	ccgtcttagc	accatagcag	cccangaaac	caagagcaaa	gaccacaacg	480
cnngctgcga	atgaaaagaaa	ntaccacagt	tgacaaactg	catggccact	ggacgacagt	540
tggcccgaan	atcttcagaa	aagggtatgc	ccatcgattg	aacacccana	tgccactgac	600
cnacaggggt	gcncncncn	gaaagaatga	gccattgaag	aaggatcntc	ntggctcttaa	660
tgaactgaaa	ccntgcatgg	tggcccctgt	tcagggtctct	tggcagtga	ttctganaaa	720
aaggaacngc	ntnagcccc	ccaaangana	aaacaccccc	gggtgttgcc	ctgaattggc	780
ggccaaggan	ccctgccccn	g				801

<210> 17

<211> 740

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (740)

<223> n = A,T,C or G

<400> 17

gtgagagcca	ggcgccctc	tgctgccca	ctcagtggca	acacccggga	gctgttttgt	60
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cctttgtgga	gcctcagcag	ttccctcttt	cagaactcac	tgccaagagc	cctgaacagg	120
agccaccatg	cagtgttca	gcttcattaa	gaccatgatg	atcctcttca	atttgctcat	180
ctttctgtgt	ggtgcagccc	tggtggcagt	gggcatctgg	gtgtcaatcg	atggggcatc	240
ctttctgaag	atcttcgggc	cactgtcgtc	cagtgccatg	cagtttgtca	acgtgggcta	300
cttcctcatc	gcagccggcg	ttgtggtctt	tgctcttggg	ttcctgggct	gctatgggtg	360
taagacggag	agcaagtgtg	ccctcgtgac	gttcttcttc	atcctcctcc	tcattctcat	420
tgctgaagtt	gcagctgctg	tggtcgctt	gggtgtacacc	acaatggctg	aaccattcct	480
gacgttgctg	gtantgcctg	ccatcaanaa	agattatggg	ttcccaggaa	aaattcactc	540
aantntggaa	caccnccatg	aaaagggtc	caatttctgn	tggcttcccc	aactataccg	600
gaattttgaa	agantcnccc	tacttccaaa	aaaaaanant	tgcttttccc	ccntttctgt	660
tgcaatgaaa	acntcccaan	acngccaatn	aaaacctgcc	cnnncaaaaa	ggntcncaaa	720
caaaaaaant	nnaagggttn					740

<210> 18

<211> 802

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(802)

<223> n = A,T,C or G

<400> 18

ccgctgggtg	cgctgggtcca	gngnagccac	gaagcacgtc	agcatcacaca	gcctcaatca	60
caagggtctt	cagctgccgc	acattacgca	gggcaagagc	ctccagcaac	actgcatatg	120
ggatacactt	tacttttagca	gccagggtga	caactgagag	gtgtcgaagc	ttattcttct	180
gagcctctgt	tagtggagga	agattccggg	cttcagctaa	gtagtcagcg	tatgtcccat	240
aagcaaacac	tgtgagcagc	cggaaaggtg	aggcaagtc	actctcagcc	agctctctaa	300
cattggggcat	gtccagcagt	tctccaaaca	cgtagacacc	agnggcctcc	agcacctgat	360
ggatgagtg	ggccagcgct	gcccccttgg	ccgacttggc	taggagcaga	aattgctcct	420
ggttctgccc	tgtcaccttc	acttcgcgac	tcatactgct	actgagtggt	ggggacttgg	480
gctcaggatg	tccagagacg	tggttcgcgc	ccctcnctta	atgacaccgn	ccanncaacc	540
gtcggctccc	gcccantgng	ttcgtcgtn	ctgggtcagg	gtctgctggc	cnctacttgc	600
aancctcgct	ngggccatgg	aattcacnc	accggaactn	gtangatcca	ctnnttctat	660
aaccggncgc	caccgcnhnt	ggaactccac	tcttnttccc	tttacttgag	gggtaagggtc	720
acccttnncc	ttaccttggg	ccaaacctn	ccntgtgtcg	anatngtnaa	tcnggncna	780
tnccanccnc	atangaagcc	ng				802

<210> 19

<211> 731

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(731)

<223> n = A,T,C or G

<400> 19

cnaagcttcc	aggtnacggg	ccgcnaance	tgaccnagg	tancanaang	cagnncgcgg	60
gagccaccg	tcacngngng	gngtctttat	nggagggggc	ggagccacat	cnctggacnt	120
cntgacccca	actccccncc	ncncantgca	gtgatgagtg	cagaactgaa	ggtnacgtgg	180
caggaaacca	gancaaannc	tgctccnntc	caagtcggcn	nagggggcgg	ggctggccac	240
gcncatccnt	cnagtgtctg	aaagccccnn	cctgtctact	tgtttgagga	acngcnnga	300

catgcccagn gttanataac nggcngagag tnanntttgcc tctcccttcc ggctgcgcan	360
cngtnttgct tagnggacat aacctgacta cttaactgaa cccnngaate tncnccccct	420
ccactaagct cagaacaaaa aacttcgaca ccactcantt gtcacctgnc tgctcaagta	480
aagtgtaccc catncccaat gtntgctnga ngctctgncc tgcnttangt tcggtcctgg	540
gaagacctat caattnaagc tatgtttctg actgcctctt gctccctgna acaancnacc	600
cnnnntcca aggggggggnc ggcccccaat ccccccaacc ntnaattnan tttancccn	660
ccccngggc cggcctttta cnanctcnn nnacngggna aaaccnngc tttncccaac	720
nnaatccnc t	731

<210> 20
 <211> 754
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(754)
 <223> n = A,T,C or G

<400> 20	
tttttttttt tttttttttt taaaaacccc ctccattnaa tgnaaacttc cgaaattgtc	60
caacccccctc ntccaaatnn ccntttccgg gnggggggttc caaacccaan ttanntttgg	120
annttaaatt aaatnttntt tggngggnna anccnaatgt nangaaagtt naaccanta	180
tnancttnaa tncctggaaa ccngtngntt ccaaaaatnt ttaaccetta antccctccg	240
aaatngtttna nggaaaaccc aanttctcnt aagggtgttt gaaggntnaa tnaaaanccc	300
nnccaattgt ttttngccac gectgaatta attggnntcc gntgttttcc nttaaaanaa	360
ggnnancccc gggtantnaa tcccccnnc cccaattata ccganttttt ttngaattgg	420
gancccnccg gaattaacgg ggnnnntccc tnttgggggg cnggnncccc cccntcggg	480
ggttngggnc aggncnnaat tgtttaaggg tccgaaaaat ccctccnaga aaaaaanctc	540
ccaggntgag nntnggggtt nccccccccc cangggccct ctcgnanagt tgggggttgg	600
ggggcctggg attttntttc cctnttnc tcccccccc cngggganag aggttngnt	660
tttgntcnn ggccecnccn aaganctttt ccganttnan ttaaaccnt gcctnggcga	720
agtcnttgn agggntaaan ggccccctnn cggg	754

<210> 21
 <211> 755
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(755)
 <223> n = A,T,C or G

<400> 21	
atcancccat gaccccnac nngggaccnc tcanccggnc nnncnaccnc cggecnatca	60
nngtnagnnc actnennntn natcacnccc cnccnactac gccnncnanc cnacgcnetc	120
nncanattnc actganngcg cgangtngan ngagaaanct nataccanag ncaccanacn	180
ccagctgtcc nanaangcct nnnatacngg nnnatccaat ntgnancctc cnaagtattn	240
nncnncanat gattttccnt anccgattac ccntncccc tanccctcc cccccaacna	300
cgaaggcnct ggncnnaagg nngcgncc ccgctagntc cccnncncaagt cncnnccta	360
aactcanccn nattacnccg ttcttgagta tcaactcccc aatctcacc tactcaactc	420
aaaaanactn gatacaaaat aatncaagcc tgnttatnac actntgactg ggtctctatt	480
ttagnngtcc ntnaanctc ctaatacttc cagtctncc tcnccaattt ccnaangget	540
ctttcngaca gcatnttttg gtteccnntt ggggtcttan ngaattgccc ttctnngaac	600

gggctentct	tttccctcgg	ttancctggn	ttcnnccggc	cagttattat	ttcccntttt	660
aaattcntnc	cntttanttt	tggcnttcna	aacccccggc	cttgaaaacg	gccccctggt	720
aaaaggttgt	tttganaaaa	tttttgtttt	gttcc			755

<210> 22
 <211> 849
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(849)
 <223> n = A,T,C or G

<400> 22						
tttttttttt	tttttangtg	tngtcgtgca	ggtagaggct	tactacaant	gtgaanacgt	60
acgctnggan	taangcgacc	cgantttctag	ganncnccct	aaaatcanac	tgtgaagatn	120
atcctgnnna	cggaanggtc	accggnngat	nntgctaggg	tgncnctcc	cannncnttn	180
cataactcng	nggccctgcc	caccaccttc	ggcggcccnng	ngnccggggc	cgggtcattn	240
gnnttaaccn	cactnngcna	nccggtttccn	nccccnncng	accnnggcga	tccgggggtnc	300
tctgtcttcc	cctgnagncn	anaaantggg	ccnccggnccc	ctttaccctt	nnacaagcca	360
cngcctteta	ncnccngccc	ccccctccant	nnggggggact	gccnannget	ccgttncctng	420
nnaccccnnn	gggtncctcg	gttgtcgant	cnaccgnang	ccanggatc	cnaaggaagg	480
tgcgttnttg	gccccctacc	ttcgttncgg	nncacccttc	ccgacnanga	nccgctcccg	540
cncnncgnng	cctcncctcg	caacacccgc	nctcntcngt	ncggnnnccc	ccccacccgc	600
nccctcncnc	ngnccgnancn	ctccnccncc	gtctcannca	ccaccccgcc	ccgccaggcc	660
ntcanccacn	ggngacnng	nagcnccntc	gcncccgcn	gcgnccctt	cgccnccngaa	720
ctnccntcngg	ccantnncgc	tcaancnna	cnaaacgcgc	ctgcgcggcc	cgnagcgncc	780
ncctccncca	gtcctcccg	cttcnacc	angnnttccn	cgaggacacn	nnaccccgcc	840
nncangcgg						849

<210> 23
 <211> 872
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(872)
 <223> n = A,T,C or G

<400> 23						
gcgcaaacta	tacttcgctc	gnactcgtgc	gcctcgtcnc	tcttttcttc	cgcaaccatg	60
tctgachanc	ccgattnggc	ngatatenan	aagntcganc	agtccaaact	gantaacaca	120
cacacnncan	aganaaatcc	nctgccttcc	anagtanacn	attgaacnng	agaaccangc	180
nggcgaatcg	taatnaggcg	tgcgcgcgca	atntgtcncc	gtttattntn	ccagcntcnc	240
ctnccnacc	tacntcttcn	nagctgtcnn	acccctngtn	cgnaccccc	naggtcggga	300
tccgggtttn	nntgaccgng	cnnccctcc	ccccctccat	nacganccnc	ccgcaccacc	360
nanngcncc	ncccggnct	cttcgcnc	ctgtcctntn	cccctgtngc	ctggcnccng	420
accgcattga	ccctcgccnn	ctnccnngaaa	ncgnanacgt	ccgggttggn	annancgctg	480
tgggnnngcg	tctgcncgc	gttccttcn	ncncttcca	ccatcttct	tacnnggtct	540
ccnccgcttc	tcnncacnc	cctgggaagc	tnctcctngc	cccccttnac	tccccctt	600
cgncgtgncc	cgnccccacc	ntcatttnca	nacgntcttc	acaannncct	ggntnncctc	660
cnancngncn	gtcanccnag	ggaagggngg	ggnnccnntg	nttgacgttg	ngngngangtc	720
cgaanantcc	tcnccntcan	cncctaccct	cgggcgnnct	ctcngttnc	aacttancaa	780

ntctcccccg ngngcnctc tcagcctenc ccccccnct ctctgcantg tntctctgctc 840
tnaccnntac gantnttcgn cncctcttt cc 872

<210> 24
<211> 815
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(815)
<223> n = A,T,C or G

<400> 24
gcatgcaagc ttgagtattc tatagngtca cctaaatanc ttggcntaat catggctenta 60
nctgncttcc tgtgtcaaat gtatacnaan tanatatgaa tctnatntga caaganngta 120
tcntncatta gtaacaantg tnttgtccat cctgtengan canattccca tnnattncgn 180
cgcattcn cn cantatn taatngggaa ntcnnntnn ncaccnncat ctatcntncc 240
gcncctgac tggagagat ggatnanttc tntnttgacc nacatgttca tcttggattn 300
aanaccccc cgcngnccac cggttngnng cnagccnntc ccaagacctc ctgtggaggt 360
aacctgcgtc aganncatca aacntgggaa acccgcnnc angtnnaagt ngnnncanan 420
gatcccgctc aggnntnacc atcccttcnc agcgccctt ttngtgcctt anagngnagc 480
gtgtccnanc cnetcaacat ganacgcgcc agnccanccg caattnggca caatgtcgnc 540
gaaccccccta gggggantna tncaaanccc caggattgtc cnncangaa atcccnanc 600
ccnccctac cennctttgg gacngtgacc aantcccgga gtncagtcg gccngnctc 660
ccccaccggt nncntgggg ggggtgaanct cngnntcanc cngnccaggn ntcgnaagga 720
accggnctn ggncgaanng ancnntcnga agngccnnt cgtataacce cccctcncca 780
nccnacngnt agntcccccc cngggtnccg aangg 815

<210> 25
<211> 775
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(775)
<223> n = A,T,C or G

<400> 25
ccgagatgtc tcgctccgtg gccttagctg tgctcgcgt actctctctt tctggcctgg 60
aggctatcca gcgtactcca aagattcagg ttactcacg tcatccagca gagaatggaa 120
agtcaaattt cctgaattgc tatgtgtctg ggtttcatcc atccgacatt gaanttgact 180
tactgaagaa tgganagaga attgaaaaag tggagcattc agacttgtct ttcagcaagg 240
actggtcttt ctatctctg tactacactg aattcacccc cactgaaaaa gatgagtatg 300
cctgcccgtg gaaccatgtg actttgtcac agcccaagat agttaagtgg gatcgagaca 360
tgtaagcagn cnnatggaa gtttgaagat gccgcatttg gattggatga attccaaatt 420
ctgcttgcct gcnttttaant antgatatgc ntatacacc taccctttat gncccccaaat 480
tgtaggggtt acatnantgt tcnctngga catgatcttc ctttataant cncncttctg 540
aattgcccgt cncnctnngt ngaatgtttc cnaaacacg gttggctccc ccaggtcncc 600
tcttacggaa gggcctgggc cnettttncaa ggttggggga accnaaaatt tcncttntgc 660
ccncccncca cnetcttng nncncanttt ggaacccttc cnattccct tggcctcnna 720
nccttnncta anaaaactn aaancgtngc naaanntttt acttcccccc ttacc 775

<210> 26

<211> 820
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(820)
 <223> n = A,T,C or G

<400> 26
 anattantac agtgtaatct tttcccagag gtgtgtanag ggaacggggc ctagaggcat 60
 cccanagata ncttatanca acagtgcctt gaccaagagc tgctggggcac atttcctgca 120
 gaaaagggtg cgggtcccat cactcctect ctcccatagc catcccagag gggtgagtag 180
 ccatcangcc ttcgggtggga gggagtcang gaaacaacan accacagagc anacagacca 240
 ntgatgacca tgggcgggag cgagcctctt ccctgnaccg ggggtggcana nganagccta 300
 nctgaggggt cacactataa acgttaacga ccnagatnan cacctgcttc aagtgcaccc 360
 ttcctacctg acnaccagng accnnnaact gcngcctggg gacagcncctg ggancagcta 420
 acnnagcact cacctgcccc cccatggccg tncgcntccc tggctcctgnc aaggggaagct 480
 ccctgttgga attncgggga naccaaggga nccccctect ccantctgtga aggaaaaann 540
 gatggaattt tnccttcccg gccnntcccc tcttctctta cacgccccct nntactcttc 600
 tccctctntt ntcctgncnc acttttnacc ccnnnatctt ccttnattga tcggannctn 660
 ganattccac tnncgctnc cntcnatcng naanacnaaa nactntctna cccnggggat 720
 gggnnccctg ntcactctct ctttttctct accnccnntt ctttgccctc ccttngatca
 780tccaacctc gntggcctn ccccccnnt tcttttccc
 820

<210> 27
 <211> 818
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(818)
 <223> n = A,T,C or G

<400> 27
 tctgggtgat ggcctcttcc tcctcaggga cctctgactg ctctgggcca aagaatctct 60
 tgtttcttct ccgagcccca ggcagcgggtg attcagccct gcccaacctg attctgatga 120
 ctgaggatgc tgtgacggac ccaaggggca aatagggtcc cagggtccag ggagggggcg 180
 ctgctgagca ctcccgcccc tcaccctgcc cagccctgc catgagctct gggctgggtc 240
 tccgcctcca gggttctgct ctccangca ngccancaa tggcgctggg ccacactggc 300
 ttcttctgct cccntccctg gctctgante tctgtcttcc tgtcctgtgc angcnccttg 360
 gatctcagtt tccctcctc anngaactct gtttctgann tcttcantta actntgantt 420
 tatnaccnan tggntctgnc tgcnnactt taatgggcn gaccggctaa tccctccctc 480
 nctcccttcc anttcnnna accngettnc cntctctcc cntancccg ccnggggaanc 540
 ctcccttgcc ctnaccangg gccnnnaccg ccctnnctn ggggggcnng gtnnctncnc 600
 ctgntnnccc cctcncnnt tncctcgctc cncnnnccn nngcannttc nengtcccn 660
 tnnctcttcn ngntcgnaa ngntcncntn tnnnnngncn ngntnntncn tccctctcnc 720
 cnnntgnang tnnntnnnc ncngncccc nnnnnnnnn nggnntnnn tctncncngc 780
 cccnncccc ngnattaagg cctcnnctc ccggccnc 818

<210> 28
 <211> 731
 <212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(731)

<223> n = A,T,C or G

<400> 28

aggaagggcg	gagggatatt	gtangggatt	gagggatagg	agnataangg	gggaggtgtg	60
tcccaacatg	anggtgnngt	tctcttttga	angagggttg	ngtttttann	ccnggtgggt	120
gattnaaccc	cattgtatgg	agnnaaagg	tttnagggat	ttttcggctc	ttatcagtat	180
ntanattcct	gtnaatcgg	aaatnatntt	tcnncnggaa	aatnttgctc	ccatccgnaa	240
attnctcccg	ggtagtgc	nttnggggg	cngccangtt	tcccaggctg	ctanaatcgt	300
actaaagntt	naagtgggan	tncaaataa	aacctnnac	agagnatccn	tacccgactg	360
tnnnttncct	tcgcccctng	actctgcng	agcccaatac	ccnngngnat	gtcncncngn	420
nnngcgcnc	tgaaannnnc	tcgnggctnn	gancatcang	gggtttcgca	tcaaaagcnn	480
cgtttncat	naaggcactt	tngcctcatc	caaccnctng	ccctcnncca	tttngccgctc	540
nggttncct	acgctnntng	cncctnnntn	ganattttnc	ccgcctnggg	naancctcct	600
gnaatgggta	gggncttntc	ttttnaccnn	ngggtntact	aatcnnctnc	acgcntnctt	660
tctcnacccc	cccccttttt	caatcccanc	ggcnaatggg	gtctcccenn	cgangggggg	720
nnnccannc	c					731

<210> 29

<211> 822

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(822)

<223> n = A,T,C or G

<400> 29

actagtccag	tgtgggtggaa	ttccattgtg	ttggggncnc	ttctatgant	antnttagat	60
cgctcanacc	tcacancctc	ccnacnangc	ctataangaa	nannaataga	nctgtncnnt	120
atntntacnc	tcatanncct	cnnnaccac	tccctcttaa	ccntactgt	gcctatngcn	180
tnnctantct	ntgcgcctn	cnanccacn	gtggggccnac	cncnngnat	ctcnatctcc	240
tcnccatntn	gcctananta	ngtncatacc	ctataacctac	nccaatgcta	nnnctaanch	300
tccatnantt	annntaacta	ccactgaent	ngactttenc	atnanctcct	aatttgaatc	360
tactctgact	cccacngcct	annnattagc	ancntcccc	nacnatntct	caaccaaatc	420
ntcaacaacc	tatctanctg	ttcnccaacc	nttncctccg	atccccnnac	aacccccctc	480
ccaaataccc	nccacctgac	ncctaaccn	caccatcccg	gcaagccnan	ggncatttan	540
ccactggaat	cacnatngga	naaaaaaaaa	ccnaactctc	tancncnnat	ctccctaana	600
aatnctcctn	naatttactn	ncantnccat	caancccaac	tgaaacnnaa	ccccgtttt	660
tanatccctt	ctttcgaaaa	ccnacccttt	annncccaac	ctttngggcc	ccccnctnc	720
ccnaatgaag	gncncccaat	cnangaaacg	ncntgaaaa	ancnaggcna	anannntccg	780
canatcctat	cccttanttn	ggggncctt	nccnggggcc	cc		822

<210> 30

<211> 787

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (787)

<223> n = A,T,C or G

<400> 30

cggccgcctg	ctctggcaca	tgcctcctga	atggcatcaa	aagtgatgga	ctgcccattg	60
ctagagaaga	ccttctctcc	tactgtcatt	atggagccct	gcagactgag	ggctcccctt	120
gtctgcagga	tttgatgtct	gaagtcgtgg	agtgtggctt	ggagctcctc	atctacatna	180
gctggaagcc	ctggagggcc	tctctcgcca	gcctccccct	tctctccacg	ctctccangg	240
acaccagggg	ctccaggcag	cccattattc	ccagnangac	atgggtgttc	tccacgcgga	300
cccatggggc	ctgnaaggcc	agggctctct	ttgacaccat	ctctcccgtc	ctgcctggca	360
ggcgtggga	tccactantt	ctanaacggn	cgccaccncg	gtgggagctc	cagcttttgt	420
tcccnttaat	gaaggttaat	tgcncgcttg	gcgtaatcat	nggtcanaac	tntttcctgt	480
gtgaaattgt	ttntcccctc	ncnatccnc	ncnacatacn	aacccggaan	cataaagtgt	540
taaagcctgg	gggtngcctn	nngaataaac	tnaactcaat	taattgcgtt	ggctcatggc	600
ccgctttccn	ttcnggaaaa	ctgtcntccc	ctgcnttntt	gaatcgggca	ccccccnggg	660
aaaagcggtt	tgcnttttng	ggggnctcct	ccncttcccc	cctcncctaan	ccctncgcct	720
cggctcgttc	nggtngcggg	gaangggnat	nnnctcccnc	naagggggng	agnnngntat	780
ccccaaa						787

<210> 31

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (799)

<223> n = A,T,C or G

<400> 31

tttttttttt	tttttttggc	gatgctactg	tttaattgca	ggaggtgggg	gtytgtgtac	60
catgtaccag	ggctattaga	agcaagaagg	aaggagggag	ggcagagcgc	cctgctgagc	120
aacaaaggac	tcctgcagcc	ttctctgtct	gtctcttgcc	gcaggcacat	ggggaggcct	180
cccgcaaggt	ggggggccacc	agtccagggg	tgggagcact	acanggggtg	ggagtgggtg	240
gtggctggtn	cnaatggcct	gncacanatc	cctacgattc	ttgacacctg	gatttcacca	300
ggggaccttc	tgtttctccc	nggnaacttc	ntnnatctcn	aaagaacaca	actgtttctt	360
cngcanttct	ggctgttcat	ggaaagcaca	ggtgtccnat	ttnggctggg	acttgggtaca	420
tatggttccg	gcccacctct	ccntcnaa	aagtaattca	ccccccccc	ccntctnttg	480
cctggggcct	taantaccca	caccgggaact	canttantta	ttcatcttng	gntgggcttg	540
ntnatcncn	cctgaangcg	ccaagttgaa	aggccacgcc	gtncnccnctc	cccatagnan	600
nttttnnt	canctaatgc	ccccccnggc	aacnatccaa	tccccccccc	tggggggcccc	660
agccccanggc	ccccgnetcg	ggnnncnngn	cncgnantcc	ccaggntctc	ccantcngnc	720
ccnnngcncc	cccgcaacga	gaacanaagg	ntngagccnc	cgcannnnnn	nggtnncnac	780
ctcgcccccc	ccnnegng					799

<210> 32

<211> 789

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (789)

<223> n = A,T,C or G

<400> 32

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tttttccnag	ggcaggttta	ttgacaacct	cncgggacac	aancaggctg	gggacaggac	120
ggcaacaggc	tccggcggcg	gcggcgggcg	ccctacctgc	ggtaccaa	ntgcagcctc	180
cgctcccgt	tgatnttct	ctgcagctgc	aggatgccnt	aaaacagggc	ctcgccntn	240
ggtgggcacc	ctgggatttn	aatttccacg	ggcacaatgc	ggtcgcance	cctcaccacc	300
nattaggaat	agtggtnnta	cccnccnccg	ttggcncact	ccccntggaa	accacttntc	360
gcggctcccg	catctggtct	taaaccttgc	aaacnctggg	gccctctttt	tggttantnt	420
nccngccaca	atcatnactc	agactggcnc	gggctggccc	caaaaaancn	ccccaaaacc	480
ggnccatgtc	ttnnccgggt	tgctgcnatn	tnatcacct	cccgggcncn	ncaggncaac	540
ccaaaagtgc	ttgngggccn	caaaaaanct	ccggggggnc	ccagtttcaa	caaagtcac	600
ccccttggcc	cccaaactct	ccccccgntt	netgggtttg	ggaaccacg	cctctnnctt	660
tggnnggcaa	gntggntccc	ccttcggggc	cccgggtggg	ccnctcttaa	ngaaaacncc	720
ntcctnnnca	ccatcccccc	nngnnacgnc	tancaangna	tccctttttt	tanaaacggg	780
ccccccnccg						789

<210> 33

<211> 793

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(793)

<223> n = A,T,C or G

<400> 33

gacagaacat	gttggatggt	ggagcacctt	tctatacgac	ttacaggaca	gcagatgggg	60
aattcatggc	tggttgagca	atanaacccc	agttctacga	gctgctgac	aaaggacttg	120
gactaaagtc	tgatgaactt	cccaatcaga	tgagcatgga	tgattggcca	gaaatgaana	180
agaagtttgc	agatgtat	gcaaagaaga	cgaaggcaga	gtggtgtcaa	atctttgacg	240
gcacagatgc	ctgtgtgact	ccggttctga	cttttgagga	ggttggtcat	catgatcaca	300
acaangaacg	gggctcggtt	atcaccantg	aggagcagga	cgtgagcccc	cgccctgcac	360
ctctgctgtt	aaacacccca	gccatccctt	ctttcaaaaag	ggatccacta	cttctagagc	420
ggncgcccacc	gcgggtggagc	tccagctttt	gttcccttta	gtgaggggtta	attgcgcgct	480
tggcgtaatc	atggtcatan	ctgtttcctg	tgtgaaattg	ttatccgctc	acaattccac	540
acaacatacg	anccggaagc	atnaaat	aaagcctggn	ggtngcctaa	tgantgaact	600
nactcacatt	aattggcttt	gcgctcactg	cccgttttcc	agtcgggaaa	acctgtcctt	660
gccagctgcc	nttaatgaat	cnggccaccc	cccggggaaa	aggcngtttg	cttnttgggg	720
cgcncctccc	gcttttctgc	ttcctgaant	ccttcccccc	ggtctttcgg	cttgcggcna	780
acggtatcna	cct					793

<210> 34

<211> 756

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(756)

<223> n = A,T,C or G

<400> 34

gccgcgaccg	gcatgtacga	gcaactcaag	ggcgagtggg	accgtaaaag	ccccaatctt	60
ancaagtgcg	gggaanagct	gggtcgactc	aagctagtct	ttctggagct	caacttcttg	120

ccaaccacag	ggaccaagct	gaccaaacag	cagctaattc	tggcccgtga	catactggag	180
atcggggccc	aatggagcat	cctacgcaan	gacatcccc	ccttcgagcg	ctacatggcc	240
cagctcaaat	gctactactt	tgattacaan	gagcagctcc	ccgagtcagc	ctatatgcac	300
cagctcttgg	gcctcaacct	cctcttcctg	ctgtcccaga	accgggtggc	tgantnccac	360
acgganttgg	ancggctgcc	tgcccaanga	catacanacc	aatgtctaca	tcnaccacca	420
gtgtcctgga	gcaatactga	tgganggcag	ctaccncaaa	gtnttcctgg	ccnagggtaa	480
catccccgc	cgagagctac	accttcttca	ttgacatcct	gctcgacact	atcagggatg	540
aaaatcgcn	ggttgctcca	gaaaggctnc	aanaanatcc	tttctnctga	aggcccccg	600
atnctnctag	nctagaatcg	gccccccatc	gcgggtgganc	ctccaacctt	tcgttncctt	660
ttactgaggg	ttnattgccg	cccttggcgt	tatcatggtc	acnccngttn	cctgtgttga	720
aattnttaac	cccccaaca	tccacgcna	catnng			756

<210> 35

<211> 834

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(834)

<223> n = A,T,C or G

<400> 35

ggggatctct	anactnacct	gnatgcatgg	ttgtcggtgt	ggtcgctgtc	gatgaanatg	60
aacaggatct	tgcccttgaa	gctctcggt	gctgtnttta	agttgctcag	tctgccgtca	120
tagtcagaca	cnctcttggg	caaaaaacan	caggatntga	gtcttgattt	cacctccaat	180
aatcttcnng	gctgtctgct	cggtgaactc	gatgacnang	ggcagctggt	tgtgtntgat	240
aaantccanc	angttctcct	tggtgacctc	cccttcaaag	ttgttccggc	cttcatcaaa	300
cttctnnaan	angannancc	canctttgtc	gagctggnat	ttgganaaca	cgtcactgtt	360
ggaaaactgat	cccaaagtgt	atgtcatcca	tcgctctgct	tgcttgcaaa	aaacttgctt	420
ggcncaaate	cgactcccn	tccttgaaag	aagccnatca	cacccccctc	cctggactcc	480
nncaangact	ctnccgctnc	ccntccnng	cagggttggg	ggcannccgg	gccntgctc	540
ttcttcagcc	agttcacnat	nttcatcagc	ccctctgcca	gctgtnttat	tccttggggg	600
ggaanccgtc	tctcccttcc	tgaannaact	ttgaccgtng	gaatagccgc	gcntcncnt	660
acntnctggg	ccgggttcaa	antccctccn	ttgncnntcn	cctcggggcca	ttctggattt	720
nccnaacttt	ttccttcccc	cncnccnccg	ngtttggntt	tttcatnggg	ccccaaactc	780
gctnttggcc	antcccttgg	gggcntntan	cncnccntnt	ggtcccntng	ggcc	834

<210> 36

<211> 814

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(814)

<223> n = A,T,C or G

<400> 36

cggnccgttt	cngccgcgc	cccgtttcca	tgacnaaggc	tccttccang	ttaaatacnn	60
cctagnaaac	attaatgggt	tgtctacta	atacatcata	cnaaccagta	agcctgccca	120
naacgccaac	tcaggccatt	cctaccaaag	gaagaaaggc	tggtctctcc	acccccgtga	180
ggaaaggcct	gccttgtaag	acaccacaat	ncggctgaat	ctnaagtctt	gtgttttact	240
aatggaaaaa	aaaaataaac	aanagggttt	gttctcatgg	ctgcccaccg	cagcctggca	300
ctaaaacanc	ccagcgctca	cttctgcttg	ganaaatatt	ctttgctctt	ttggacatca	360

ggcttgatgg tatcactgcc acntttccac ccagctgggc ncccttcccc catntttgtc	420
antganctgg aaggcctgaa ncttagtctc caaaagtctc ngcccacaag accggccacc	480
aggggagangtc ntttncagtg gatctgccaa anantaccen tatcatcnnt gaataaaaag	540
gccccgaac ganatgcttc cancanctt taagacccat aatcctngaa ccatggtgcc	600
cttccggtct gatccnaaag gaatgttcct gggteccant ccttcctttg ttncctacgt	660
tgtnttggac cntgctngn atnaccnaan tganatcccc ngaagcacc tccccctggc	720
atttganttt cntaaattct ctgccctacn nctgaaagca cnattccctn ggcncnnaan	780
ggngaactca agaaggtctn ngaaaaacca cncn	814

<210> 37

<211> 760

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(760)

<223> n = A,T,C or G

<400> 37

gcattgctgct ctctctcaaa gttgttcttg ttgccataac aaccaccata ggtaaagcgg	60
gcgcagtgtt cgctgaaggg gttgtagtac cagcgcggga tgctctcctt gcagagtctt	120
gtgtctggca ggtccacgca atgcccttg tcaactggga aatggatgcg ctggagctcg	180
tcnaanccac tcgtgtattt ttcacangca gcctctccg aagctcccg gcagttgggg	240
gtgtcgtcac actccactaa actgtcgatn cancagccca ttgctgcagc ggaactgggt	300
gggctgacag gtgccagaac acaactggatn ggcttttcca tggaagggcc tgggggaaat	360
cncctnancc caaactgcct ctcaaaggcc accttgacac ccccgacagg ctagaaatgc	420
actcttcttc ccaaaggtag ttgttcttgt tgcccaagca ncctccanca aacccaaanc	480
ttgcaaaatc tgctccgtgg gggatcatnnn taccanggtt ggggaaanaa acccggnngn	540
ganccnctt gtttgaatgc naaggnaata atcctcctgt cttgcttggg tggaanagca	600
caattgaact gttaacnttg ggccgngttc cncnnggtg gtctgaaact aatcacctgc	660
actggaaaaa ggtangtgcc ttccttgaat tcccaaatc cccctngntt tgggtntttt	720
ctcctctncc ctaaaaatcg tnttcccccc cntanggcg	760

<210> 38

<211> 724

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(724)

<223> n = A,T,C or G

<400> 38

tttttttttt tttttttttt tttttttttt ttttttaaaa cccctccat tgaatgaaaa	60
cttccnaaat tgtccaaccc cctcnccaa atnnccattt ccgggggggg gttccaaacc	120
caaattaatt ttgganttta aattaaatnt tnatnngggg aanaanccaa atgtnaagaa	180
aatttaaccc attatnaact taaatnccn gaaaccntg gnttccaaaa atttttaacc	240
cttaaatccc tccgaaattg ntaanggaaa accaaattcn cctaaggctn tttgaagggt	300
ngatttaaac ccccttnant tnttttnacc cnnngctnaa ntatttngnt tccggtgttt	360
tcctnttaan cntnggtaac tcccgntaat gaannnccct aanccaatta aaccgaattt	420
tttttgaatt ggaaattccn ngggaattna ccgggggttt tccnttttg gggccatncc	480
ccncttttcg ggggtttgggn ntaggttgaa ttttttnang ncccaaaaaa ncccccaana	540
aaaaaactcc caagnnttaa ttngaatttc ccccttccca ggcttttttg gaaaggnngg	600

tttntggggg	ccngggantt	cnttccccc	ttncncccc	cccccnnggt	aaanggttat	660
ngnntttggt	ttttggggcc	cttnanggac	cttccggatn	gaaattaaat	ccccgggncg	720
gccg						724

<210> 39
 <211> 751
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(751)
 <223> n = A,T,C or G

<400> 39						
tttttttttt	tttttctttg	ctcacattta	atttttat	tgattttttt	taatgctgca	60
caacacaata	tttatttcat	ttgtttcttt	tatttcattt	tatttgtttg	ctgctgctgt	120
tttatttatt	tttactgaaa	gtgagaggga	acttttgtgg	ccttttttcc	tttttctgta	180
ggccgcctta	agctttctaa	atttggaaca	tctaagcaag	ctgaanggaa	aaggggggtt	240
cgcaaaatca	ctcgggggaa	nggaaagggt	gctttgttaa	tcatgcccta	tggtgggtga	300
ttaactgctt	gtacaattac	ntttcacttt	taattaattg	tgctnaangc	tttaattana	360
cttggggggt	ccctccccc	accaaccccn	ctgacaaaaa	gtgccngccc	tcaaattnatg	420
tcccggcnn	cnttgaaaca	cacngcngaa	ngttctcatt	ntccccncnc	caggtnaaaa	480
tgaagggtta	ccatntttta	cncacacctc	acntggcnnn	gcctgaatcc	tcnaaaancn	540
ccctcaancn	aattnctnng	ccccggtcnc	gcntnngtc	cnccegggct	ccgggaantn	600
cacccccnga	anncnntnnc	naacnaaatt	ccgaaaatat	tcccnntcnc	tcaattcccc	660
cnnagactnt	cctcnncnan	cncaattttc	ttttnttcac	gaacncgnnc	cnnaaaatgn	720
nnnncnctc	cnctngtccn	naatcnccan	c			751

<210> 40
 <211> 753
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(753)
 <223> n = A,T,C or G

<400> 40						
gtggtatttt	ctgtaagatc	aggtgttcct	ccctcgtagg	tttagaggaa	acaccctcat	60
agatgaaaac	ccccccgaga	cagcagcact	gcaactgcca	agcagccggg	gtaggagggg	120
cgccctatgc	acagctgggc	ccttgagaca	gcagggtctc	gatgtcaggc	tcgatgtcaa	180
tggtctggaa	gcggcggtctg	tacctgcgtg	ggggcacacc	gtcaggggcc	accaggaact	240
tctcaaagtt	ccaggcaacn	tcgttgcgac	acaccggaga	ccagggtgatn	agcttgggggt	300
cggtcataan	cgcggtggcg	tcgtcgctgg	gagctggcag	ggcctcccgc	aggaaggcna	360
ataaaagggtg	cgcccccgca	ccgttcanct	cgcacttctc	naanaccatg	angttgggct	420
cnaaccacc	accannccgg	acttccttga	nggaattccc	aaatctcttc	gntcttgggc	480
ttctnctgat	gccctanctg	gttgcccngn	atgccaanca	nccccaancc	ccggggctct	540
aaancccn	cctcctcnnt	tcactctgggt	tnntntcccc	ggaccttggt	tcctctcaag	600
ggancccata	tctcnaccan	tactcacctn	nccccccnt	gnnaccanc	cttctanngn	660
ttccncccc	ncctctggcc	cntcaaan	gcttnacna	cctgggtctg	ccttcccccc	720
tnccctatct	gnaccnncn	tttgtctcan	tn			753

<210> 41

<211> 341
 <212> DNA
 <213> Homo sapien

<400> 41
 actatatcca tcacaacaga catgcttcat cccatagact tcttgacata gcttcaaagt 60
 agtgaaccca tcttgattt atatacatat atgttctcag tattttggga gcctttccac 120
 ttctttaaac cttgttcatt atgaacactg aaaataggaa tttgtgaaga gttaaaaagt 180
 tatagcttgt ttacgtagta agtttttgaa gtctacattc aatccagaca cttagttgag 240
 tggtaaaactg tgatttttaa aaaatatcat ttgagaatat tctttcagag gtattttcat 300
 ttttactttt tgattaattg tgttttatat attagggtag t 341

<210> 42
 <211> 101
 <212> DNA
 <213> Homo sapien

<400> 42
 acttactgaa tttagttctg tgctcttcct tatttagtgt tgtatcataa atactttgat 60
 gtttcaaaca ttctaaataa ataattttca gtggcttcat a 101

<210> 43
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 43
 acatctttgt tacagtctaa gatgtgttct taaatcacca ttccttctctg gtcctcacc 60
 tccaggggtgg tctcacactg taattagagc tattgaggag tctttacagc aaattaagat 120
 tcagatgcct tgctaagtct agagttctag agttatgttt cagaaaagtct aagaaaccca 180
 cctcttgaga ggtagtaaa gaggacttaa tatttcatat ctacaaaatg accacaggat 240
 tggatacaga acgagagtta tcttgataa cttagagctg agtacctgcc cgggggcccgc 300
 tcgaa 305

<210> 44
 <211> 852
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(852)
 <223> n = A,T,C or G

<400> 44
 acataaatat cagagaaaag tagtctttga aatattttacg tccaggagtt ctttgtttct 60
 gattatttgg tgtgtgtttt gggttggtgc caaagtattg gcagcttcag ttttcatttt 120
 ctctccatcc tcgggcattc ttcccaaat tatataccag tcttcgtcca tccacacgct 180
 ccagaatttc tctttttag taatatetca tagctcggct gagcttttca taggtcatgc 240
 tgctgttgtt cttcttttta ccccatagct gagccactgc ctctgatttc aagaacctga 300
 agacgccctc agatcgggtc tcccatttta ttaatcctgg gttcttggtc ttggttcaaga 360
 ggatgtcgcg gatgaattcc cataagttag tccctctcgg gttgtgcttt ttggtgtggc 420
 acttggcagg ggggtcttgc tcttttttca tatcagggtga ctctgcaaca ggaagggtgac 480
 tggtggttgt catggagatc tgagcccggc agaaagtgtt gctgtccaac aaatctactg 540
 tgctaccata gttggtgtca tataaatagt tctngtcttt ccagggtgtc atgatggaag 600

gctcagtttg	ttcagtccttg	acaatgacat	tgtgtgtgga	ctggaacagg	tcactactgc	660
actggccgtt	ccacttcaga	tgctgcaagt	tgctgtagag	gagntgcccc	gccgtccctg	720
ccgcccgggt	gaactcctgc	aaactcatgc	tgcaaagggt	ctcgccgttg	atgtcgaact	780
cntggaaagg	gatacaattg	gcatccagct	ggttggtgtc	caggaggtga	tggagccact	840
cccacacctg	gt					852

<210> 45

<211> 234

<212> DNA

<213> Homo sapien

<400> 45

acaacagacc	cttgctcgct	aacgacctca	tgctcatcaa	gttggacgaa	tccgtgtccg	60
agtctgacac	catccggagc	atcagcattg	cttcgcagtg	ccctaccgcg	gggaactctt	120
gcctcgtttc	tggctggggg	ctgctggcga	acggcagaat	gcctaccgtg	ctgcagtgcg	180
tgaacgtgtc	ggtggtgtct	gaggaggtct	gcagtaagct	ctatgacctg	ctgt	234

<210> 46

<211> 590

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (590)

<223> n = A,T,C or G

<400> 46

actttttatt	taaatgttta	taaggcagat	ctatgagaat	gatagaaaac	atggtgtgta	60
atttgatagc	aatatatttg	agattacaga	gttttagtaa	ttaccaatta	cacagttaaa	120
aagaagataa	tatatccaa	gcanatacaa	aatatcta	gaaagatcaa	ggcaggaaaa	180
tgantataac	taattgacaa	tggaaaatca	attttaatgt	gaattgcaca	ttatccttta	240
aaagctttca	aaanaaanaa	ttattgcagt	ctanttaatt	caaacagtgt	taaatggtat	300
caggataaan	aactgaaggg	canaaagaat	taattttcac	ttcatgtaac	ncacccanat	360
ttacaatggc	ttaaatgcan	ggaaaaagca	gtggaagtag	ggaagtantc	aaggtctttc	420
tggtctctaa	tctgccttac	tctttgggtg	tggctttgat	cctctggaga	cagctgccag	480
ggctcctgtt	atatccacaa	tcccagcagc	aagatgaagg	gatgaaaaag	gacacatgct	540
gccttccttt	gaggagactt	catctcactg	gccaacactc	agtcacatgt		590

<210> 47

<211> 774

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (774)

<223> n = A,T,C or G

<400> 47

acaagggggc	ataatgaagg	agtgggggana	gatttttaaag	aaggaaaaaa	aacgaggccc	60
tgaacagaat	tttcctgnac	aacgggggctt	caaaataatt	ttcttgggga	ggttcaagac	120
gcttcactgc	ttgaaactta	aatggatgtg	ggacanaatt	ttctgtaatg	accctgaggg	180
cattacagac	gggactctgg	gaggaaggat	aaacagaaaag	gggacaaaag	ctaataccaa	240
aacatcaaag	aaaggaagggt	ggcgtcatac	ctcccagcct	acacagttct	ccagggtct	300

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cctcatccct ggaggacgac agtggaggaa caactgacca tgtccccagg ctctgtgtg 360
ctggctcctg gtcttcagcc cccagctctg gaagcccacc ctctgctgat cctgcgtggc 420
ccacactcct tgaacacaca tccccaggtt atattcctgg acatggctga acctcctatt 480
cctacttccg agatgccttg ctccctgcag cctgtcaaaa tcccactcac cctccaaacc 540
acggcatggg aagcctttct gacttgcttg attactccag catcttggaa caatccctga 600
ttccccactc cttagaggca agataggggt gttaagagta gggctggacc acttggagcc 660
aggctgctgg cttcaaattt tggctcattt acgagctatg ggaccttggg caagtnatct 720
tcacttctat gggcntcatt ttgttctacc tgcaaaatgg gggataataa tagt 774

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<210> 48

<211> 124

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(124)

<223> n = A,T,C or G

<400> 48

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canaaattga aattttataa aaaggcattt ttctcttata tccataaaat gatataattt 60
ttgcaantat anaaatgtgt cataaattat aatgttcctt aattacagct caacgcaact 120
tggt 124

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<210> 49

<211> 147

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(147)

<223> n = A,T,C or G

<400> 49

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gccgatgcta ctattttatt gcaggaggtg ggggtgtttt tattattctc tcaacagctt 60
tgtggctaca ggtggtgtct gactgcatna aaaanttttt tacgggtgat tgcaaaaatt 120
ttagggcacc catatcccaa gcantgt 147

```

<210> 50

<211> 107

<212> DNA

<213> Homo sapien

<400> 50

```

acattaaatt aataaaagga ctgttgggggt tctgctaaaa cacatggctt gatatattgc 60
atggtttgag gttaggagga gttaggcata tgttttggga gaggggt 107

```

<210> 51

<211> 204

<212> DNA

<213> Homo sapien

<400> 51

```

gtcctaggaa gtctagggga cacacgactc tggggtcacg gggccgacac acttgcacgg 60

```

```

cggggaaggaa aggcagagaa gtgacaccgt caggggggaaa tgacagaaag gaaaatcaag    120
gccttgcaag gtcagaaagg ggactcaggg cttccaccac agccctgccc cacttggcca    180
cctccctttt gggaccagca atgt                                           204

```

```

<210> 52
<211> 491
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(491)
<223> n = A,T,C or G

```

```

<400> 52
acaaagataa catttatctt ataacaaaaa ttgatagtt ttaaaggtta gtattgtgta    60
gggtattttt caaaagacta aagagataac tcaggtaaaa agttagaaat gtataaaaca    120
ccatcagaca gggtttttaa aaacaacata ttacaaaatt agacaatcat ccttaaaaaa    180
aaaacttctt gtatcaattt cttttgttca aaatgactga cttaantatt tttaaattatt    240
tcanaaacac ttcttcaaaa attttcaana tggtagcttt canatgtnc ctcagtccca    300
atgttgctca gataaataaa tctcgtgaga acttaccacc caccacaagc tttctggggc    360
atgcaacagt gtcttttctt tnccttttct tttttttttt ttacaggcac agaaactcat    420
caattttatt tggataacaa agggctctca aattatattg aaaaataaat ccaagttaat    480
atcactcttg t                                           491

```

```

<210> 53
<211> 484
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(484)
<223> n = A,T,C or G

```

```

<400> 53
acataattta gcagggctaa ttaccataag atgctattta ttaanaggtn tatgatctga    60
gtattaacag ttgctgaagt ttgggtattt tatgcagcat tttctttttg ctttgataac    120
actacagaac ccttaaggac actgaaaatt agtaagtaaa gttcagaaac attagctgct    180
caatcaaadc tctacataac actatagtaa ttaaaacgtt aaaaaaaagt gttgaaatct    240
gcactagtat anaccgctcc tgtcaggata anactgcttt ggaacagaaa gggaaaaaanc    300
agctttgant ttctttgtgc tgatangagg aaaggctgaa ttaccttgtt gcctctccct    360
aatgattggc aggtcnggta aatnccaaaa catattccaa ctcaacactt cttttccnng    420
tancttgant ctgtgtattc caggancagg cggatggaat gggccagccc ncggatgttc    480
cant                                           484

```

```

<210> 54
<211> 151
<212> DNA
<213> Homo sapien

```

```

<400> 54
actaaacctc gtgcttgtga actccataca gaaaacgggtg ccataccctga acacggctgg    60
ccactgggta tactgtgac aaccgcaaca acaaaaacac aaatccttgg cactggctag    120
tctatgtcct ctcaagtgcc tttttgttg t                                           151

```

<210> 55
 <211> 91
 <212> DNA
 <213> Homo sapien

<400> 55
 acctggcttg tctccgggtg gttccccggcg cccccacgg tccccagaac ggacactttc 60
 gccctccagt ggatactcga gccaaagtgg t 91

<210> 56
 <211> 133
 <212> DNA
 <213> Homo sapien

<400> 56
 ggcggatgtg cgttggttat atacaaatat gtcattttat gtaagggact tgagtataact 60
 tggatttttg gtatctgtgg gttgggggga cgggccagga accaataccc catggatacc 120
 aagggacaac tgt 133

<210> 57
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (147)
 <223> n = A,T,C or G

<400> 57
 actctggaga acctgagccg ctgctccgcc tctgggatga ggtgatgcan gcngtggcgc 60
 gactgggagc tgagcccttc cctttgcgcc tgccctcagag gattgttgcc gacntgcana 120
 tctcantggg ctggatncat gcaggg 147

<210> 58
 <211> 198
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (198)
 <223> n = A,T,C or G

<400> 58
 acagggatat aggtttnaag ttattgtnat tgtaaaatac attgaatttt ctgtatactc 60
 tgattacata catttatcct ttaaaaaaga tgtaaatcct aatttttatg ccacttatta 120
 atttaccat gagttacctt gtaaatgaga agtcatgata gcactgaatt ttaactagtt 180
 ttgacttcta agtttgg 198

<210> 59
 <211> 330
 <212> DNA
 <213> Homo sapien

<400> 59

acaacaaatg ggttgtgagg aagtcttatc agcaaaactg gtgatggcta ctgaaaagat	60
ccattgaaaa ttatcattaa tgattttaaa tgacaagtta tcaaaaactc actcaatttt	120
cacctgtgct agcttgctaa aatgggagtt aactctagag caaatatagt atcttctgaa	180
tacagtcaat aaatgacaaa gccagggcct acaggtgggt tccagacttt ccagacccag	240
cagaaggaat ctattttatc acatggatct ccgtctgtgc tcaaaatacc taatgatatt	300
tttcgtcttt attggacttc tttgaagagt	330

<210> 60

<211> 175

<212> DNA

<213> Homo sapien

<400> 60

accgtgggtg ccttctacat tcctgacggc tccttcacca acatctgggt ctacttcggc	60
gtcgtgggtc ccttctctt catctcatc cagctgggtc tgctcatcga ctttgccgac	120
tcctggaacc agcgggtggc gggcaaggcc gaggagtgcg attcccgtgc ctggt	175

<210> 61

<211> 154

<212> DNA

<213> Homo sapien

<400> 61

acccacttt tcctcctgtg agcagtctgg acttctcact gctacatgat gagggtgagt	60
ggttgttgct cttcaacagt atcctccctt ttccggatct gctgagccgg acagcagtgc	120
tggactgcac agccccggg ctccacattg ctgt	154

<210> 62

<211> 30

<212> DNA

<213> Homo sapien

<400> 62

cgctcgagcc ctatagttag tcgtattaga	30
----------------------------------	----

<210> 63

<211> 89

<212> DNA

<213> Homo sapien

<400> 63

acaagtcatt tcagaccct ttgctcttca aaactgacca tcttttatat ttaatgcttc	60
ctgtatgaat aaaaatgggt atgtcaagt	89

<210> 64

<211> 97

<212> DNA

<213> Homo sapien

<400> 64

accggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa ggttctgcag	60
aatcagtgc tccaggattg gtccttggat ctgggggt	97

<210> 65
 <211> 377
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (377)
 <223> n = A,T,C or G

<400> 65
 acaacaanaa ntcccttctt taggccactg atggaaacct ggaaccccct ttgatggca 60
 gcatggcgct ctaggccttg acacagcggc tgggggttgg gctntcccaa accgcacacc 120
 ccaaccctgg tctaccaca nttctggcta tgggctgtct ctgccactga acatcagggg 180
 tcggtcataa natgaaatcc caanggggac agaggtcagt agaggaagct caatgagaaa 240
 ggtgctgttt gctcagccag aaaacagctg cctggcattc gccgctgaac tatgaaccgg 300
 tgggggtgaa ctaccccccag gaggaatcat gctggggcga tgcaanggtg ccaacaggag 360
 gggcgggagg agcatgt 377

<210> 66
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 66
 acgcctttcc ctcagaattc agggaagaga ctgtcgccctg ccttcctccg ttgttgcgctg 60
 agaacccttg tgccccttcc caccatatcc accctcgctc catctttgaa ctcaaacacg 120
 aggaactaac tgcaccctgg tcctctcccc agtccccagt tcacctcca tccctcacct 180
 tctccactc taagggatat caacactgcc cagcacaggg gccctgaatt tatgtggttt 240
 ttatatattt ttttaataaga tgcactttat gtcatttttt aataaagtct gaagaattac 300
 tgttt 305

<210> 67
 <211> 385
 <212> DNA
 <213> Homo sapien

<400> 67
 actacacaca ctccacttgc ccttgtgaga cactttgtcc cagcacttta ggaatgctga 60
 ggtcggacca gccacatctc atgtgcaaga ttgccagca gacatcaggt ctgagagttc 120
 cccttttaaa aaaggggact tgcttaaaaa agaagtctag ccacgattgt gttagagcagc 180
 tgtgctgtgc tggagattca cttttgagag agttctcctc tgagacctga tctttagagg 240
 ctgggcagtc ttgcacatga gatggggctg gtctgatctc agcactcctt agtctgcttg 300
 cctctcccag ggccccagcc tggccacacc tgcttacagg gcactctcag atgccatac 360
 catagtttct gtgctagtgg accgt 385

<210> 68
 <211> 73
 <212> DNA
 <213> Homo sapien

<400> 68
 acttaaccag atatattttt accccagatg gggatattct ttgtaaaaaa tgaaaataaa 60
 gttttttttaa tgg 73

<210> 69
 <211> 536
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(536)
 <223> n = A,T,C or G

<400> 69
 actagtcag tgtgggtggaa ttccattgtg ttggggggctc tcaccctcct ctctgcagc 60
 tccagctttg tgctctgcct ctgaggagac catggcccag catctgagta cctgctgct 120
 cctgctggcc accctagctg tggccctggc ctggagcccc aaggaggagg ataggataat 180
 cccgggtggc atctataacg cagacctcaa tgatgagtgg gtacagcgtg cccttcactt 240
 cgccatcagc gagtataaca aggccaccaa agatgactac tacagacgtc cgctgcgggt 300
 actaagagcc aggcaacaga ccgttggggg ggtgaattac ttcttcgacg tagaggtggg 360
 ccgaaccata tgtaccaagt cccagcccaa cttggacacc tgtgccttcc atgaacagcc 420
 agaactgcag aagaaacagt tgtgctcttt cgagatctac gaagtccct ggggagaaca 480
 gaangtccct gggtgaaatc caggtgtcaa gaaatcctan ggatctgttg ccaggc 536

<210> 70
 <211> 477
 <212> DNA
 <213> Homo sapien

<400> 70
 atgaccccta acagggggccc tctcagccct cctaattgacc tccggcctag ccatgtgatt 60
 tcacttccac tccataacgc tctcataact aggcctacta accaacacac taaccatata 120
 ccaatgatgg cgcgatgtaa cagagaaaag cacataccaa ggccaccaca caccacctgt 180
 ccaaaaaggc cttcgatacg ggataatcct atttattacc tcagaagttt ttttcttcgc 240
 agggattttt ctgagccctt taccactcca gcctagcccc tcccccccaa ctaggagggc 300
 actggccccc aacaggcatc accccgctaa atcccctaga agtcccactc ctaaacacat 360
 ccgtattact cgcatacagga gtatcaatca cctgagctca ccatagtcta atagaaaaca 420
 accgaaacca aattattcaa agcactgctt attacaattt tactgggtct ctatttt 477

<210> 71
 <211> 533
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(533)
 <223> n = A,T,C or G

<400> 71
 agagctatag gtacagtgtg atctcagctt tgcaaacaca ttttctacat agatagtact 60
 aggtattaat agatatgtaa agaaagaaat cacaccatta ataattggtaa gattgggtta 120
 tgtgatttta gtggattttt tggcaccctt atatatgttt tccaaacttt cagcagtgat 180
 attatttcca taacttaaaa agtgagtttg aaaaagaaaa tctccagcaa gcatctcatt 240
 taaataaagg tttgtcatct ttaaaaatac agcaatatgt gactttttta aaaagctgtc 300
 aaataggtgt gaccctacta ataattatta gaaatacatt taaaaacatc gagtacctca 360
 agtcagtttg ccttgaaaaa tatcaaatat aactcttaga gaaatgtaca taaaagaatg 420
 cttcgtaatt ttggagtang aggttccctc ctcaattttg tattttttaa aagtacatgg 480
 taaaaaaaaa aattcacacac agtatataag gctgtaaaat gaagaattct gcc 533

<210> 72
 <211> 511
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(511)
 <223> n = A,T,C or G

<400> 72
 tattacggaa aaacacacca cataattcaa ctancaaaga anactgcttc agggcgtgta 60
 aaatgaaagg cttccaggca gttatctgat taaagaacac taaaagaggg acaaggctaa 120
 aagccgcagg atgtctacac tatancaggc gctatttggt ttggctggag gagctgtgga 180
 aaacatggan agattgggtgc tgganacgc cgtggctatt cctcattgtt attacanagt 240
 gaggttctct gtgtgcccac tggtttgaaa accgttctnc aataatgata gaatagtaca 300
 cacatgagaa ctgaaatggc ccaaaccag aaagaaagcc caactagatc ctcagaanac 360
 gcttctaggg acaataaccg atgaagaaaa gatggcctcc ttgtgcccc gtctgttatg 420
 atttctctcc attgcagcna naaacccgtt cttctaagca aacncagggt atgatggcna 480
 aaatacaccc cctcttgaag naccnggagg a 511

<210> 73
 <211> 499
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(499)
 <223> n = A,T,C or G

<400> 73
 cagtgccagc actggtgccca gtaccagtag caataacagt gccagtgccca gtgccagcac 60
 cagtgggtggc ttcagtgtctg gtgccagcct gaccgccact ctcacatttg ggctcttcgc 120
 tggccttggg ggagctgggt ccagcaccag tggcagctct ggtgcctgtg gtttctccta 180
 caagttagat tttagatatt gttaatcctg ccagtctttc tcttcaagcc aggggtgcac 240
 ctcagaaacc tactcaacac agcactctag gcagccacta tcaatcaatt gaagttgaca 300
 ctctgcatta aatctatttg ccatctctga aaaaaaaaaa aaaaaaaggc cggccgctcg 360
 antctagagg gcccggttaa acccgctgat cagcctcgac tgtgccttct anttgccagc 420
 catctgttgt ttgccccctc cccgntgcct tccttgacct tggaaagtgc cactcccact 480
 gtcccttctc aantaaaat 499

<210> 74
 <211> 537
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(537)
 <223> n = A,T,C or G

<400> 74
 tttcatagga gaacacactg aggagatact tgaagaattt ggattcagcc gcgaagagat 60

ttatcagctt	aactcagata	aaatcattga	aagtaataag	gtaaaagcta	gtctctaact	120
tccaggccca	cggctcaagt	gaatttgaat	actgcattta	cagtgtagag	taacacataa	180
cattgtatgc	atggaaacat	ggaggaacag	tattacagtg	tcctaccact	ctaatcaaga	240
aaagaattac	agactctgat	tctacagtga	tgattgaatt	ctaaaaatgg	taatcattag	300
ggcttttgat	ttataanact	ttgggtactt	atactaaatt	atggtagtta	tactgccttc	360
cagtttgctt	gatataattg	ttgatattaa	gattcttgac	ttatattttg	aatgggttct	420
actgaaaaan	gaatgatata	ttcttgaaga	catcgatata	catttattta	cactcttgat	480
tctacaatgt	agaaaatgaa	ggaaatgccc	caaattgtat	ggtgataaaa	gtcccgt	537

<210> 75

<211> 467

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(467)

<223> n = A,T,C or G

<400> 75

caaanacaat	tgttcaaaaag	atgcaaata	tacactactg	ctgcagctca	caaacacctc	60
tgcataattac	acgtacctcc	tcctgctcct	caagtagtgt	ggtctatatt	gccatcatca	120
cctgctgtct	gcttagaaga	acggctttct	gctgcaangg	agagaaatca	taacagacgg	180
tggcacaaag	aggccatctt	ttcctcatcg	gttattgtcc	ctagaagcgt	cttctgagga	240
tctagttggg	ctttctttct	gggtttgggc	catttcantt	ctcatgtgtg	tactattcta	300
tcattattgt	ataacggttt	tcaaaccngt	gggcacncag	agaacctcac	tctgtaataa	360
caatgaggaa	tagccacggt	gatctccagc	accaaattct	tccatgttnt	tccagagctc	420
ctccagccaa	cccaaatagc	cgctgctatn	gtgtagaaca	tccttgn		467

<210> 76

<211> 400

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(400)

<223> n = A,T,C or G

<400> 76

aagctgacag	cattcggggc	gagatgtctc	gctccgtggc	cttagctgtg	ctcgcgtac	60
tctctctttc	tggcctggag	gctatccagc	gtactccaaa	gattcaggtt	tactcacgtc	120
atccagcaga	gaatggaaa	tcaaatttcc	tgaattgcta	tgtgtctggg	tttcatccat	180
ccgacattga	agttgactta	ctgaagaatg	gagagagaat	tgaaaaagtg	gagcattcag	240
acttgtcttt	cagcaaggac	tggcttttct	atctcttgta	ctacactgaa	ttcaccccca	300
ctgaaaaaga	tgagtatgcc	tgccgtgtga	accatgtgac	tttgtcacag	cccaagatng	360
ttnagtggga	tcganacatg	taagcagcan	catgggaggt			400

<210> 77

<211> 248

<212> DNA

<213> Homo sapien

<400> 77

ctggagtgcc	ttggtgtttc	aagcccctgc	aggaagcaga	atgcaccttc	tgaggcacct	60
------------	------------	------------	------------	------------	------------	----

```

ccagctgccc cggcggggga tgcgaggctc ggagcaccct tgcccggctg tgattgctgc      120
caggcactgt tcatctcagc ttttctgtcc ctttgctccc ggcaagcgct tctgctgaaa      180
gttcatatct ggagcctgat gtcttaacga ataaaggctc catgctccac ccgaaaaaaa      240
aaaaaaaaa                                     248

```

```

<210> 78
<211> 201
<212> DNA
<213> Homo sapien

```

```

<400> 78
actagtcacag tgtggtggaa ttccattgtg ttgggcccac cacaatgget acctttaaca      60
tcacccagac cccgccctgc ccgtgcccac cgctgctgct aacgacagta tgatgcttac      120
tctgctactc ggaaactatt tttatgtaat taatgtatgc tttcttggtt ataaatgcct      180
gatttaaaaa aaaaaaaaaa a                                     201

```

```

<210> 79
<211> 552
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(552)
<223> n = A,T,C or G

```

```

<400> 79
tccttttgtt aggtttttga gacaacccta gacctaaact gtgtcacaga cttctgaatg      60
tttaggcagt gctagtaatt tcctcgtaat gattctgtta ttactttcct attctttart      120
cctctttcct ctgaagatta atgaagtga aaattgaggt ggataaatac aaaaaggtag      180
tgtgatagta taagtatcta agtgcagatg aaagtgtgtt atatatatcc attcaaaatt      240
atgcaagtta gtaattactc aggggttaact aaattacttt aatatgctgt tgaacctact      300
ctgttccttg gctagaaaaa attataaaca ggactttgtt agtttgggaa gccaaattga      360
taatattcta tgttctaaaa gttgggctat acataaanta tnaagaaata tggaatttta      420
ttcccaggaa tatgggggtt atttatgaat antaccggg anagaagttt tgantnaaac      480
cngttttggt taatacggtta atatgtcctn aatnaacaag gcntgactta tttccaaaaa      540
aaaaaaaaa aa                                     552

```

```

<210> 80
<211> 476
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(476)
<223> n = A,T,C or G

```

```

<400> 80
acagggattt gagatgctaa ggccccagag atcgtttgat ccaaccctct tattttcaga      60
ggggaaaatg gggcctagaa gttacagagc atctagctgg tgcgctggca cccctggcct      120
cacacagact cccgagtagc tgggactaca ggcacacagt cactgaagca ggccctgttt      180
gcaattcacg ttgccacctc caacttaaac attcttcata tgtgatgtcc ttagtcaacta      240
agggttaaact ttcccaccca gaaaaggcaa cttagataaa atcttagagt actttcatac      300
tcttctaagt cctcttccag cctcactttg agtcctcctt gggggttgat aggaantntc      360

```

```
tcttggtttt ctcaataaaa tctctatcca tctcatgttt aatttggtac gcntaaaaat 420
gctgaaaaaa ttaaaatgtt ctggtttcnc tttaaaaaaa aaaaaaaaaa aaaaaa 476
```

```
<210> 81
<211> 232
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(232)
<223> n = A,T,C or G
```

```
<400> 81
tttttttttg tatgcctcn ctgtgngtt attgttgctg ccaccctgga ggagcccagt 60
ttcttctgta tctttctttt ctgggggatc ttcttggtc tgccctcca ttcccagcct 120
ctcatcccca tcttgcaatt ttgctagggt tggaggcgct ttcttggtag cccctcagag 180
actcagtcag cgggaataag tcctagggtt ggggggtgtg gcaagccggc ct 232
```

```
<210> 82
<211> 383
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(383)
<223> n = A,T,C or G
```

```
<400> 82
aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactggtgcc 60
agtaccagta ccaataacat gccagtgcc gtgccagcac cagtgggtggc ttcagtgtctg 120
gtgccagcct gaccgccact ctcacatttg ggctcttcgc tggccttggg ggagctggtg 180
ccagcaccag tggcagctct ggtgcctgtg gtttctccta caagtgagat tttagatatt 240
gttaatcctg ccagtctttc tcttcaagcc aggggtgcac ctcagaaacc tactcaacac 300
agcactctng gcagccacta tcaatcaatt gaagttgaca ctctgcatta aatctatttg 360
ccatttcaaa aaaaaaaaaa aaa 383
```

```
<210> 83
<211> 494
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(494)
<223> n = A,T,C or G
```

```
<400> 83
accgaattgg gaccgctggc ttataagcga tcatgtcctc cagtattacc tcaacgagca 60
gggagatcga gtctatacgc tgaagaaatt tgaccctgat ggacaacaga cctgctcagc 120
ccatcctgct cggttctccc cagatgacaa atactctcga caccgaatca ccatcaagaa 180
acgcttcaag tggtctatga ccagcaacc gcgccctgtc ctctgagggt ccttaaactg 240
atgtcttttc tgccacctgt taccctcgg agactccgta accaaactct tcggactgtg 300
agccctgatg cctttttgcc agccatactc tttggcntcc agtctctcgt ggcgattgat 360
```

tatgcttggtg	tgaggcaatc	atggtggcat	cacccatnaa	gggaacacat	ttganttttt	420
tttcncatat	tttaaattac	naccagaata	nttcagaata	aatgaattga	aaaactctta	480
aaaaaaaaaa	aaaa					494

<210> 84
 <211> 380
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(380)
 <223> n = A,T,C or G

<400> 84						
gctggtagcc	tatggcgtgg	ccacggangg	gctcctgagg	cacgggacag	tgacttccca	60
agtatcctgc	gccgcgtctt	ctaccgtccc	tacctgcaga	tcttcgggca	gattccccag	120
gaggacatgg	acgtggccct	catggagcac	agcaactgct	cgtcggagcc	cggcttctgg	180
gcacaccctc	ctggggccca	ggcgggcacc	tgcgtctccc	agtatgcaa	ctggctgggtg	240
gtgctgctcc	tctcatctt	cctgctcgtg	gccaacatcc	tgtggtcac	ttgtcattg	300
ccatgttcag	ttacacattc	ggcaaagtac	agggaacag	cnatctctac	tgggaaggcc	360
agcgttnccg	cctcatccgg					380

<210> 85
 <211> 481
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(481)
 <223> n = A,T,C or G

<400> 85						
gagttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatcgtc	atactgtagg	tttgccacca	cctcctgcat	cttggggcgg	ctaatatcca	120
ggaaactctc	aatcaagtca	ccgtcnatna	aacctgtggc	tggttctgtc	ttccgctcgg	180
tgtgaaagga	tctccagaag	gagtgtctga	tcttccccac	acttttgatg	actttattga	240
gtcgattctg	catgtccagc	aggaggttgt	accagctctc	tgacagtgag	gtcaccagcc	300
ctatcatgcc	nttgaacgtg	ccgaagaaca	ccgagccttg	tgtggggggg	gnagtctcac	360
ccagattctg	cattaccaga	nagccgtggc	aaaaganatt	gacaactcgc	ccaggnggaa	420
aaagaacacc	tcctggaagt	gctngccgct	cctcgtccnt	tgggtggngc	gcntnccttt	480
t						481

<210> 86
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(472)
 <223> n = A,T,C or G

<400> 86

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aacatcttcc tgtataatgc tgtgtaatat cgatccgatn ttgtctgctg agaattcatt      60
acttggaata gcaacttnaa gcctggacac tggattataa attcacaata tgcaaacatt      120
taaacagtgt gtcaatctgc tcccttactt tggcatcacc agtctgggaa taaggggatg      180
ccctattcac acctgttaaa agggcgctaa gcatttttga ttcaacatct ttttttttga      240
cacaagtccg aaaaaagcaa aagtaaacag ttnttaattt gttagccaat tcactttctt      300
catgggacag agccatttga tttaaaaagc aaattgcata atattgagct ttgggagctg      360
atatntgagc ggaagantag ccttttctact tcaccagaca caactccttt catattggga      420
tgttnacnaa agttatgtct cttacagatg ggatgctttt gtggcaattc tg              472

```

<210> 87

<211> 413

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(413)

<223> n = A,T,C or G

<400> 87

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agaaaccagt atctctnaaa acaacctctc ataccttggtg gacctaatct tgtgtgctg      60
tgtgtgtgct cgcatattat atagacaggc acatcttttt tacttttgta aaagcttatg      120
cctcttttgt atctatatct gtgaaagtgt taatgatctg ccataatgtc ttggggacct      180
ttgtcttctg tgtaaatggt actagagaaa acacctatnt tatgagtcaa tctagttngt      240
tttattcgac atgaaggaaa ttccagatn acaacactna caaactctcc cttgactagg      300
ggggacaaaag aaaagcnaaa ctgaacatna gaaacaattn cctgggtgaga aattncataa      360
acagaaattg ggtngtatat tgaaanang catcattnaa acgttttttt ttt              413

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<210> 88

<211> 448

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(448)

<223> n = A,T,C or G

<400> 88

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cgcagcgggt cctctctatc tagctccagc ctctcgctg cccactccc cgcgtcccgc      60
gtcctagccn accatggcgc ggccccctgc cgccccgctg ctctgctgg ccacctggc      120
cgtggccctg gccgtgagcc ccgcggccgc ctccagctcc ggcaagccgc cgcgcctgg      180
gggaggccca tggacccgc gtggaagaag aagggtgtgc gcgtgcactg gactttgccg      240
tcggcnanta caacaaaccc gcaacnactt ttaccnagcn cgcgctgcag gttgtgccgc      300
cccaancaaa ttgttactng gggtaantaa ttcttggaag ttgaacctgg gccaaacnng      360
tttaccagaa ccnagccaat tngaacaatt nccccccat aacagcccct tttaaaaagg      420
gaancantcc tgntcttttc caaatTTT              448

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<210> 89

<211> 463

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(463)

<223> n = A,T,C or G

<400> 89

gaattttgtg	cactggccac	tgtgatggaa	ccattgggcc	aggatgcttt	gagtttatca	60
gtagtgattc	tgccaaagt	ggtgttgtaa	catgagtatg	taaaatgtca	aaaaattagc	120
agaggtctag	gtctgcatat	cagcagacag	tttgccctg	tattttgtag	ccttgaagtt	180
ctcagtgaca	agttntttct	gatgcgaagt	tctnattcca	gtgttttagt	cctttgcatc	240
tttnatgttn	agacttgcc	ctntnaaatt	gcttttgtnt	tctgcaggta	ctatctgtgg	300
tttaacaaaa	tagaannact	tctctgcttn	gaanatttga	atatcttaca	tctnaaaatn	360
aattctctcc	ccatannaaa	acccangccc	ttggganaat	ttgaaaaang	gntccttcnn	420
aattcnnana	anttcagntn	tcatacaaca	naacngganc	ccc		463

<210> 90

<211> 400

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(400)

<223> n = A,T,C or G

<400> 90

agggattgaa	ggtctntnt	actgtcggac	tgttcancca	ccaactctac	aagttgctgt	60
cttccactca	ctgtctgtaa	gcntnttaac	ccagactgta	tcttcataaa	tagaacaaat	120
tcttcaccag	tcacatcttc	taggaccttt	ttggattcag	ttagtataag	ctcttccact	180
tcctttgtta	agacttcac	tggtaaagtc	ttaagttttg	tagaaaggaa	tttaattgct	240
cgttctctaa	caatgtcctc	tccttgaagt	atttggtgta	acaaccacc	tnaagtcctt	300
ttgtgcatcc	attttaaata	tacttaatag	ggcattggtn	cactagggtta	aattctgcaa	360
gagtcactctg	tctgcaaaaag	ttgcgttagt	atatctygca			400

<210> 91

<211> 480

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(480)

<223> n = A,T,C or G

<400> 91

gagctcggat	ccaataatct	ttgtctgagg	gcagcacaca	tatncagtgc	catggnaact	60
ggtctacccc	acatgggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcctcttt	gactaccgtg	tgccagtgt	ggtgattctc	acacacctcc	nnccgctctt	180
tgtggaaaaa	ctggcacttg	netggaacta	gcaagacatc	acttacaaat	tcaccacaga	240
gacacttgaa	agggtgtaaca	aagcgactct	tgcattgctt	tttgctccctc	cggcaccagt	300
tgtcaatact	aaccgcgtgg	tttgccctcca	tcacatttgt	gatctgtagc	tctggatata	360
tctcctgaca	gtactgaaga	acttcttctt	ttgtttcaaa	agcaactctt	ggtgcctgtt	420
ngatcagggt	cccatttccc	agtcggaatg	ttcacatggc	atatnttact	tcccacaaaa	480

<210> 92

<211> 477

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (477)

<223> n = A,T,C or G

<400> 92

atacagccca	natcccacca	cgaagatgcg	cttggtgact	gagaacctga	tgcggtcact	60
ggtcccgcgtg	tagccccagc	gactctccac	ctgctggaag	cggttgatgc	tgcactcctt	120
cccacgcagg	cagcagcggg	gccgggtcaat	gaactccact	cgtggccttg	ggttgacggg	180
taantgcagg	aagaggctga	ccacctcgcg	gtccaccagg	atgcccgcact	gtgcgggacc	240
tgcagcgaaa	ctcctcgatg	gtcatgagcg	ggaagcgaat	gangcccagg	gccttgccca	300
gaaccttccg	cctgttctct	ggcgtcacct	gcagctgctg	ccgctnacac	tcggcctcgg	360
accagcggac	aaacggcggt	gaacagccgc	acctcacgga	tgcccantgt	gtcgcgctcc	420
aggaacggcn	ccagcgtgtc	caggtcaatg	tcggtgaanc	ctccgcgggt	aatggcg	477

<210> 93

<211> 377

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (377)

<223> n = A,T,C or G

<400> 93

gaacggctgg	accttgcttc	gcattgtgct	gctggcagga	ataccttggc	aagcagctcc	60
agtccgagca	gccccagacc	gctgccgccc	gaagctaagc	ctgcctctgg	ccttccccctc	120
cgcctcaatg	cagaaccant	agtgggagca	ctgtgtttag	agttaagagt	gaacactgtg	180
tgattttact	tgggaatttc	ctctgttata	tagcttttcc	caatgcta	ttccaaacaa	240
caacaacaaa	ataacatggt	tgcctgttna	gttggtataaa	agtangtgat	tctgtatnta	300
aagaaaatat	tactgttaca	tatactgctt	gcaanttctg	tatttattgg	tnctctggaa	360
ataaatatat	tattaaa					377

<210> 94

<211> 495

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (495)

<223> n = A,T,C or G

<400> 94

ccctttgagg	ggttagggtc	cagttcccag	tgggaagaaac	aggccaggag	aantgcgtgc	60
cgagctgang	cagatttccc	acagtgaccc	cagagccctg	ggctatagtc	tctgaccctt	120
ccaaggaaaag	accaccttct	ggggacatgg	gctggagggc	aggacctaga	ggcaccaagg	180
gaaggcccca	ttccggggct	gttccccgag	gaggaaggga	aggggctctg	tgtgcccccc	240
acgaggaana	ggccctgant	cctgggatca	nacaccttct	cacgtgtatc	cccacacaaa	300
tgcaagctca	ccaaggctcc	ctctcagtc	cttccctata	ccctgaacgg	ncactggccc	360
acacccaccc	agancancca	cccgccatgg	ggaatgtntc	caagggaatcg	cngggcaacg	420
tggactctng	tcccnnaagg	gggcagaatc	tccaatagan	gganngaacc	cttgctnana	480

aaaaaaaaana aaaaaa

495

<210> 95
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(472)
 <223> n = A,T,C or G

<400> 95
 gggtacttgg tttcattgcc accacttagt ggatgtcatt tagaaccatt ttgtctgctc 60
 cctctggaag ccttgccgag agcggacttt gtaattgttg gagaataact gctgaatttt 120
 tagctgtttt gagttgattc gcaccactgc accacaactc aatatgaaaa ctatttnact 180
 tattttattat cttgtgaaaa gtatacaatg aaaattttgt tcatactgta tttatcaagt 240
 atgatgaaaa gcaatagata tatattcttt tattatgttn aattatgatt gccattatta 300
 atcggcaaaa tgtggagtg atgttctttt cacagtaata tatgcctttt gtaacttcac 360
 ttggttattt tattgtaaat gaattacaaa attcttaatt taagaaaatg gtangttata 420
 tttanttcana taatttcttt ccttgtttac gtttaattttg aaaagaatgc at 472

<210> 96
 <211> 476
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

<400> 96
 ctgaagcatt tcttcaaact tntctacttt tgtcattgat acctgtagta agttgacaat 60
 gtggtgaaat ttcaaaatta tatgtaactt ctactagttt tactttctcc cccaagtctt 120
 ttttaactca tgattttttac acacacaatc cagaacttat tatatagcct ctaagtcttt 180
 attcttcaca gtagatgatg aaagagtctt ccagtgtctt gngcanaatg ttctagntat 240
 agctggatac atacngtggg agttctataa actcatacct cagtgggact naaccaaaat 300
 tgtgttagtc tcaattccta ccacactgag ggagcctccc aaatcactat attcttatct 360
 gcaggtactc ctccagaaaa acngacaggg caggcttgca tgaaaaagtn acatctgcgt 420
 taaaaagtct atcttctcta nangtctgtn aaggaacaat ttaatcttct agcttt 476

<210> 97
 <211> 479
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(479)
 <223> n = A,T,C or G

<400> 97
 actcttttcta atgctgatat gatcttgagt ataagaatgc atatgtcact agaattggata 60
 aaataatgct gcaaaacttaa tgttcttatg caaaatggaa cgctaataaa acacagctta 120

caatcgcaaa	tcaaaactca	caagtgtctca	tctgtttag	atttagtgta	ataagactta	180
gattgtgtctc	cttcggatat	gattgtttct	canatcttgg	gcaatnttcc	ttagtcaa	240
caggctacta	gaattctgtt	attggatatn	tgagagcatg	aaatttttaa	naatacactt	300
gtgattatna	aattaatcac	aaatttctact	tatacctgct	atcagcagct	agaaaaacat	360
ntnnttttta	natcaaagta	ttttgtgttt	ggaantgttn	aaatgaaatc	tgaatgtggg	420
ttcnatctta	ttttttcccn	gacnactant	tnctttttta	gggnctattc	tganccatc	479

<210> 98

<211> 461

<212> DNA

<213> Homo sapien

<400> 98

agtgacttgt	cctccaacaa	aaccccttga	tcaagtttgt	ggcactgaca	atcagaccta	60
tgctagtcc	tgctacttat	tcgctactaa	atgcagactg	gaggggacca	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaatctatt	cctacttgta	cggactttga	180
agtgattcag	tttcctctac	ggatgagaga	ctggctcaag	aatatcctca	tgacgttcta	240
tgaagccact	ctgaacacgc	tggttatcta	gatgagaaca	gagaaataaa	gtcagaaaat	300
ttacctggag	aaaagaggct	ttggctgggg	accatcccat	tgaaccttct	cttaaggact	360
ttaagaaaaa	ctaccacatg	ttgtgtatcc	tggtgccggc	cgtttatgaa	ctgaccaccc	420
tttggataaa	tcttgacgct	cctgaacttg	ctcctctgcg	a		461

<210> 99

<211> 171

<212> DNA

<213> Homo sapien

<400> 99

gtggccgcgc	gcaggtgttt	cctcgtaccg	cagggccccc	tccttcccc	aggcgtccct	60
cggcgcctct	gcgggcccga	ggaggagcgg	ctggcggtg	gggggagtgt	gaccacccct	120
cggtgagaaa	agccttctct	agcgatctga	gaggcgtgcc	ttgggggtac	c	171

<210> 100

<211> 269

<212> DNA

<213> Homo sapien

<400> 100

cgcccgcaag	tgcaactcca	gctggggcgc	tgccgacgaa	gattctgcca	gcagttggtc	60
cgactgcgac	gacggcggcg	gcgacagtgc	caggtgcagc	gcgggcgcct	ggggtcttgc	120
aaggctgagc	tgacgccgca	gaggtcgtgt	cacgtcccac	gaccttgacg	ccgtcgggga	180
cagccggaac	agagcccggg	gaagcgggag	gcctcgggga	gcccctcggg	aagggcggcc	240
cgagagatac	gcaggtgcag	gtggccgcc				269

<210> 101

<211> 405

<212> DNA

<213> Homo sapien

<400> 101

tttttttttt	ttttggaatc	tactgcgagc	acagcaggtc	agcaacaagt	ttattttgca	60
gctagcaagg	taacagggtg	gggcatgggt	acatgttcag	gtcaacttcc	tttgtcgtgg	120
ttgattgggt	tgtctttatg	ggggcggggt	ggggtagggg	aaacgaagca	aataacatgg	180
agtgggtgca	ccctccctgt	agaacctggt	tacaaagctt	ggggcagttc	acctggtctg	240
tgaccgtcat	tttcttgaca	tcaatgttat	tagaagtcag	gatattcttt	agagagtcca	300

ctgttctgga gggagattag ggtttcttgc caaatccaac aaaatccact gaaaaagtgt 360
 gatgatcagt acgaataccg aggcattatc tcatatcggt ggcca 405

<210> 102
 <211> 470
 <212> DNA
 <213> Homo sapien

<400> 102
 tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt 60
 ggcacttaat ccatttttat ttcaaaatgt ctacaaattt aatcccatta tacggtattt 120
 tcaaaatcta aattattcaa attagccaaa tccttaccaa ataataccca aaaatcaaaa 180
 atatacttct ttcagcaaac ttgttacata aattaaaaaa atatatacgg ctggtgtttt 240
 caaagtacaa ttatcttaac actgcaaaca ttttaaggaa ctaaaataaa aaaaaacact 300
 ccgcaaaggt taaaggggaa aacaaattct tttaacaacac cattataaaa atcatatctc 360
 aaatcttagg ggaatatata cttcacacgg gatcttaact ttactcact ttgtttattt 420
 ttttaaacca ttgtttgggc ccaacacaat ggaatccccc ctggactagt 470

<210> 103
 <211> 581
 <212> DNA
 <213> Homo sapien

<400> 103
 tttttttttt ttttttttga cccccctctt ataaaaaaca agttaccatt ttatttttact 60
 tacacatatt tattttataa ttggtattag atattcaaaa ggcagctttt aaaatcaaac 120
 taaatggaaa ctgccttaga tacataattc ttaggaatta gcttaaaatc tgccataagt 180
 gaaaatcttc tctagctctt ttgactgtaa atttttgact cttgtaaaac atccaaattc 240
 atttttcttg tctttaaaat tatctaattc ttccattttt tccctattcc aagtcaattt 300
 gcttctctag cctcatttcc tagctcttat ctactattag taagtggctt ttttcctaaa 360
 agggaaaaca ggaagagaaa tggcacacaa aacaaacatt ttatattcat atttctacct 420
 acgttaataa aatagcattt tgtgaagcca gctcaaaaga aggccttagat ccttttatgt 480
 ccatttttagt cactaaacga tatcaaagtg ccagaatgca aaagggtttgt gaacatttat 540
 tcaaaagcta atataagata tttcacatac tcatctttct g 581

<210> 104
 <211> 578
 <212> DNA
 <213> Homo sapien

<400> 104
 tttttttttt tttttttttt tttttctctt cttttttttt gaaatgagga tgcagttttt 60
 cactctctag atagggcatg aagaaaactc atctttccag ctttaaaata acaatcaaat 120
 ctcttatgct atatcatatt ttaagttaaa ctaatgagtc actggcttat cttctcctga 180
 aggaaatctg ttcattcttc tcattcatat agttatatca agtactacct tgcattattga 240
 gaggtttttc ttctctattt acacatatat ttccatgtga atttgatatca aacctttatt 300
 ttcatgcaaa ctagaaaata atgtttcttt tgcataagag aagagaacaa tatagcatta 360
 caaaactgct caaattgttt gtttaagtat ccattataat tagttggcag gagctaatac 420
 aaatcacatt tacgacagca ataataaaac tgaagtacca gttaaatatc caaaataatt 480
 aaaggaacat ttttagcctg ggtataatta gctaattcac tttacaagca tttattagaa 540
 tgaattcaca tgttattatt cctagcccaa cacaatgg 578

<210> 105
 <211> 538
 <212> DNA

<213> Homo sapien

<400> 105

tttttttttt	tttttcagta	ataatcagaa	caatatattat	ttttatattt	aaaattcata	60
gaaaagtgcc	ttacatttaa	taaaagtttg	tttctcaaag	tgatcagagg	aattagatat	120
gtcttgaaca	ccaatattaa	tttgaggaaa	atacaccaaa	atacattaag	taaattattt	180
aagatcatag	agcttgtaag	tgaaaagata	aaatttgacc	tcagaaactc	tgagcattaa	240
aaatccacta	ttagcaaata	aattactatg	gacttcttgc	tttaattttg	tgatgaatat	300
ggggtgtcac	tggtaaacca	acacattctg	aaggatacat	tacttagtga	tagattctta	360
tgtactttgc	taatacgtgg	atatgagttg	acaagtttct	ctttcttcaa	tcttttaagg	420
ggcgagaaat	gaggaagaaa	agaaaaggat	tacgcatact	gttctttcta	tggaaggatt	480
agatatgttt	cctttgccaa	tattaaaaaa	ataataatgt	ttactactag	tgaaaccc	538

<210> 106

<211> 473

<212> DNA

<213> Homo sapien

<400> 106

tttttttttt	ttttttagtc	aagtttctat	ttttattata	attaaagtct	tggtcatttc	60
atttattagc	tctgcaactt	acatatattaa	attaaagaaa	cgtttttagac	aactgtacaa	120
tttataaatg	taaggtgcc	ttattgagta	atatattcct	ccaagagtgg	atgtgtccct	180
tctcccacca	actaatgaac	agcaacatta	gtttaatttt	attagtagat	atacactgct	240
gcaaacgcta	attctcttct	ccatcccat	gtgatattgt	gtatatgtgt	gagttggtag	300
aatgcatcac	aatctacaat	caacagcaag	atgaagctag	gctgggcttt	cggtgaaaat	360
agactgtgtc	tgtctgaatc	aaatgatctg	acctatcctc	ggtggcaaga	actcttcgaa	420
ccgcttctct	aaaggcgctg	ccacatttgt	ggctctttgc	acttgtttca	aaa	473

<210> 107

<211> 1621

<212> DNA

<213> Homo sapien

<400> 107

cgccatggca	ctgcagggca	tctcggtcat	ggagctgtcc	ggcctggccc	cgggcccgtt	60
ctgtgctatg	gtcctggctg	acttcggggc	gcgtgtggta	cgcgtggacc	ggcccggctc	120
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<210> 108
 <211> 382
 <212> PRT
 <213> Homo sapien

<400> 108

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Arg Val Asp Arg Pro Gly Ser Arg Tyr Asp Val Ser Arg Leu Gly Arg
35     40     45
Gly Lys Arg Ser Leu Val Leu Asp Leu Lys Gln Pro Arg Gly Ala Ala
50     55     60
Val Leu Arg Arg Leu Cys Lys Arg Ser Asp Val Leu Leu Glu Pro Phe
65     70     75     80
Arg Arg Gly Val Met Glu Lys Leu Gln Leu Gly Pro Glu Ile Leu Gln
85     90     95
Arg Glu Asn Pro Arg Leu Ile Tyr Ala Arg Leu Ser Gly Phe Gly Gln
100    105    110
Ser Gly Ser Phe Cys Arg Leu Ala Gly His Asp Ile Asn Tyr Leu Ala
115    120    125
Leu Ser Gly Val Leu Ser Lys Ile Gly Arg Ser Gly Glu Asn Pro Tyr
130    135    140
Ala Pro Leu Asn Leu Leu Ala Asp Phe Ala Gly Gly Gly Leu Met Cys
145    150    155    160
Ala Leu Gly Ile Ile Met Ala Leu Phe Asp Arg Thr Arg Thr Asp Lys
165    170    175
Gly Gln Val Ile Asp Ala Asn Met Val Glu Gly Thr Ala Tyr Leu Ser
180    185    190
Ser Phe Leu Trp Lys Thr Gln Lys Ser Ser Leu Trp Glu Ala Pro Arg
195    200    205
Gly Gln Asn Met Leu Asp Gly Gly Ala Pro Phe Tyr Thr Thr Tyr Arg
210    215    220
Thr Ala Asp Gly Glu Phe Met Ala Val Gly Ala Ile Glu Pro Gln Phe
225    230    235    240
Tyr Glu Leu Leu Ile Lys Gly Leu Gly Leu Lys Ser Asp Glu Leu Pro
245    250    255
Asn Gln Met Ser Met Asp Asp Trp Pro Glu Met Lys Lys Lys Phe Ala
260    265    270
Asp Val Phe Ala Lys Lys Thr Lys Ala Glu Trp Cys Gln Ile Phe Asp
275    280    285
Gly Thr Asp Ala Cys Val Thr Pro Val Leu Thr Phe Glu Glu Val Val
290    295    300
His His Asp His Asn Lys Glu Arg Gly Ser Phe Ile Thr Ser Glu Glu
305    310    315    320
Gln Asp Val Ser Pro Arg Pro Ala Pro Leu Leu Leu Asn Thr Pro Ala

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	325		330		335										
Ile	Pro	Ser	Phe	Lys	Arg	Asp	Pro	Phe	Ile	Gly	Glu	His	Thr	Glu	Glu
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<210> 109
 <211> 1524
 <212> DNA
 <213> Homo sapien

<400> 109

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<210> 110
 <211> 3410
 <212> DNA
 <213> Homo sapien

<400> 110

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<210> 111

<211> 1289

<212> DNA

<213> Homo sapien

<400> 111

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<210> 112

<211> 315

<212> PRT

<213> Homo sapien

<400> 112

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Phe	Phe	Leu	Phe	Phe	Leu	Gly	Val	Trp	Leu	Val	Ala	Tyr	Gly	Val	Ala
		35				40						45			
Thr	Glu	Gly	Leu	Leu	Arg	Pro	Arg	Asp	Ser	Asp	Phe	Pro	Ser	Ile	Leu
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Arg	Arg	Val	Phe	Tyr	Arg	Pro	Tyr	Leu	Gln	Ile	Phe	Gly	Gln	Ile	Pro
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Gln	Glu	Asp	Met	Asp	Val	Ala	Leu	Met	Glu	His	Ser	Asn	Cys	Ser	Ser
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Glu	Pro	Gly	Phe	Trp	Ala	His	Pro	Pro	Gly	Ala	Gln	Ala	Gly	Thr	Cys
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Val	Ser	Gln	Tyr	Ala	Asn	Trp	Leu	Val	Val	Leu	Leu	Leu	Val	Ile	Phe
		115				120						125			
Leu	Leu	Val	Ala	Asn	Ile	Leu	Leu	Val	Asn	Leu	Leu	Ile	Ala	Met	Phe
	130				135					140					
Ser	Tyr	Thr	Phe	Gly	Lys	Val	Gln	Gly	Asn	Ser	Asp	Leu	Tyr	Trp	Lys
145				150				155						160	
Ala	Gln	Arg	Tyr	Arg	Leu	Ile	Arg	Glu	Phe	His	Ser	Arg	Pro	Ala	Leu
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Ala	Pro	Pro	Phe	Ile	Val	Ile	Ser	His	Leu	Arg	Leu	Leu	Leu	Arg	Gln
		180				185						190			
Leu	Cys	Arg	Arg	Pro	Arg	Ser	Pro	Gln	Pro	Ser	Ser	Pro	Ala	Leu	Glu

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 His Phe Arg Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr
 210 215 220
 Trp Glu Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp
 225 230 235 240
 Lys Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val
 245 250 255
 Asp Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg
 260 265 270
 Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly
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<210> 113

<211> 553

<212> PRT

<213> Homo sapien

<400> 113

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 35 40 45
 Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly
 50 55 60
 Leu Val Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly
 65 70 75 80
 Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile
 85 90 95
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 115 120 125
 Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
 130 135 140
 Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
 145 150 155 160
 Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
 165 170 175
 Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu
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 Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His
 225 230 235 240
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260 265 270
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 Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
 290 295 300
 Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
 305 310 315 320
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 325 330 335
 Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
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 355 360 365
 Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
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 Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
 385 390 395 400
 Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
 405 410 415
 Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
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 Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
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 Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala
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 Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
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 Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
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<210> 114
 <211> 241
 <212> PRT
 <213> Homo sapien

<400> 114
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 Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser
 35 40 45
 Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly
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 Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr
 65 70 75 80
 Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Phe Ile Leu Leu Leu Ile

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<210> 115
<211> 366
<212> DNA
<213> Homo sapien
```

```
<210> 116
<211> 282
<212> DNA
<213> Homo sapien
```

```
<210> 117
<211> 305
```

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(305)
<223> n = A,T,C or G

<400> 117
acacatgtcg cttcactgcc ttcttagatg cttctggtca acatanagga acagggacca 60
tatttatcct ccctcctgaa acaattgcaa aataanacaa aatatatgaa acaattgcaa 120
aataaggcaa aatatatgaa acaacagggtc tcgagatatt ggaaatcagt caatgaagga 180
tactgatccc tgatcactgt cctaattgcag gatgtgggaa acagatgagg tcacctctgt 240
gactgccccca gcttactgcc tgtagagagt ttctangctg cagttcagac agggagaaat 300
tgggt 305

<210> 118
<211> 71
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(71)
<223> n = A,T,C or G

<400> 118
accaagggtgt ntgaatctct gacgtgggga tctctgattc ccgcacaatc tgagtggaaa 60
aantcctggg t 71

<210> 119
<211> 212
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(212)
<223> n = A,T,C or G

<400> 119
actccggttg gtgtcagcag cacgtggcat tgaacatngc aatgtggagc ccaaaccaca 60
gaaaatgggg tgaaattggc caactttcta tnaacttatg ttggcaantt tgccaccaac 120
agtaagctgg cccttctaataaaaagaaaat tgaaagggtt ctcactaanc ggaattaant 180
aatggantca aganactccc aggcctcagc gt 212

<210> 120
<211> 90
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(90)
<223> n = A,T,C or G

<400> 120
 actcgttgca natcaggggc cccccagagt caccgttgca ggagtccttc tggctcttgcc 60
 ctccgccggc gcagaacatg ctgggggtggt 90

<210> 121
 <211> 218
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(218)
 <223> n = A,T,C or G

<400> 121
 tgtancgtga anacgacaga nagggttggtc aaaaatggag aanccttgaa gtcattttga 60
 gaataagatt tgctaaaaga tttgggggcta aaacatgggtt attgggagac atttctgaag 120
 atatncangt aaattangga atgaattcat ggttcttttg ggaattcctt tacgatngcc 180
 agcatanact tcatgtgggg atancagcta cccttgta 218

<210> 122
 <211> 171
 <212> DNA
 <213> Homo sapien

<400> 122
 taggggtgta tgcaactgta aggacaaaaa ttgagactca actggcttaa ccaataaagg 60
 catttgtag ctcatggaac aggaagtcgg atgggtggggc atcttcagtg ctgcatgagt 120
 caccaccccg gcggggtcat ctgtgccaca ggtccctggt gacagtgcgg t 171

<210> 123
 <211> 76
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(76)
 <223> n = A,T,C or G

<400> 123
 tgtagcgtga agacnacaga atgggtgtgtg ctgtgctatc caggaacaca tttattatca 60
 ttatcaanta ttgtgt 76

<210> 124
 <211> 131
 <212> DNA
 <213> Homo sapien

<400> 124
 acctttcccc aaggccaatg tcctgtgtgc taactggccg gctgcaggac agctgcaatt 60
 caatgtgctg ggtcatatgg aggggaggag actctaaaat agccaatttt atttctcttg 120
 ttaagatttg t 131

<210> 125
 <211> 432
 <212> DNA
 <213> Homo sapien

<400> 125
 actttatcta ctggctatga aatagatggg ggaaaattgc gttaccaact ataccactgg 60
 cttgaaaaag aggtgatagc tcttcagagg acttgtgact tttgctcaga tgctgaagaa 120
 ctacagtctg catttggcag aaatgaagat gaatttggat taaatgagga tgctgaagat 180
 ttgcctcacc aaacaaaagt gaaacaactg agagaaaatt ttcaggaaaa aagacagtgg 240
 ctcttgaagt atcagtcact tttgagaatg tttcttagtt actgcatact tcatggatcc 300
 catgggtgggg gtcttgcacg tgtaagaatg gaattgattt tgcttttgca agaattctcag 360
 caggaaacat cagaaccact attttctagc cctctgtcag agcaaaccct agtgccctctc 420
 ctctttgctt gt 432

<210> 126
 <211> 112
 <212> DNA
 <213> Homo sapien

<400> 126
 acacaacttg aatagtaaaa tagaaactga gctgaaattt ctaattcact ttctaaccat 60
 agtaagaatg atatttcccc ccagggatca ccaaatattt ataaaaattt gt 112

<210> 127
 <211> 54
 <212> DNA
 <213> Homo sapien

<400> 127
 accacgaaac cacaacaag atggaagcat caatccactt gccaaagcaca gcag 54

<210> 128
 <211> 323
 <212> DNA
 <213> Homo sapien

<400> 128
 acctcattag taattgtttt gttgtttcat ttttttctaa tgtctcccct ctaccagctc 60
 acctgagata acagaatgaa aatggaagga cagccagatt tctcctttgc tctctgtca 120
 ttctctctga agtctaggtt acccattttg gggaccatt ataggcaata aacacagttc 180
 ccaaagcatt tggacagttt cttgttgtgt tttagaatgg ttttcctttt tcttagcctt 240
 ttcttgcaaa aggtcactc agtcccttgc ttgctcagtg gactgggctc cccagggcct 300
 aggtgcctt cttttccatg tcc 323

<210> 129
 <211> 192
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(192)
 <223> n = A,T,C or G

<400> 129

```

acatacatgt gtgtatatatt ttaaatatca cttttgtatc actctgactt tttagcatac      60
tgaaaacaca ctaacataat ttntgtgaac catgatcaga tacaacccaa atcattcatc      120
tagcacattc atctgtgata naaagatagg tgagtttcat ttccttcacg ttggccaatg      180
gataaacaaa gt                                     192

```

<210> 130

<211> 362

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(362)

<223> n = A,T,C or G

<400> 130

```

ccctttttta tggaatgagt agactgtatg tttgaanatt tanccacaac ctctttgaca      60
tataatgacg caacaaaaag gtgctgttta gtcctatggg tcagtttatg cccctgacaa      120
gtttccattg tgttttgccg atcttctggc taatcgtggg atcctccatg ttattagtaa      180
ttctgtattc cattttgtta acgcctggta gatgtaacct gctangaggc taactttata      240
cttattttaa agctcttatt ttgtggtcac taaaatggca atttatgtgc agcactttat      300
tgcagcagga agcacgtgtg gggttggtgt aaagctcttt gctaattctta aaaagtaatg      360
gg                                     362

```

<210> 131

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(332)

<223> n = A,T,C or G

<400> 131

```

ctttttgaaa gatcgtgtcc actcctgtgg acatcttggt ttaatggagt ttcccatgca      60
gtangactgg tatggttgca gctgtccaga taaaaacatt tgaagagctc caaaatgaga      120
gttctcccag gttcgccctg ctgctccaag tctcagcagc agcctctttt aggaggcatc      180
ttctgaacta gattaaggca gcttgtaa atctgatgtgat ttggtttatt atccaactaa      240
cttccatctg ttatcactgg agaaagccca gactccccc an gacnggtacg gattgtgggc      300
atanaaggat tgggtgaagc tggcggtgtg gt                                     332

```

<210> 132

<211> 322

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(322)

<223> n = A,T,C or G

<400> 132

```

acttttgcca ttttgtatat ataaacaatc ttgggacatt ctctgaaaa ctaggtgtcc      60

```

agtggttaag	agaactcgat	ttcaagcaat	tctgaaagga	aaaccagcat	gacacagaat	120
ctcaaattcc	caaacagggg	ctctgtggga	aaaatgaggg	aggacctttg	tatctcgggt	180
tttagcaagt	taaaatgaan	atgacaggaa	aggcttattt	atcaacaaag	agaagagttg	240
ggatgcttct	aaaaaaaaact	ttggtagaga	aaataggaat	gctnaatcct	agggaagcct	300
gtaacaatct	acaattgggtc	ca				322

<210> 133

<211> 278

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 133

acaagccttc	acaagttaa	ctaaattggg	attaatcttt	ctgtanttat	ctgcataatt	60
cttggttttc	tttccatctg	gctcctgggt	tgacaatttg	tggaacaac	tctattgcta	120
ctatttaaaa	aaaatcacia	atctttccct	ttaagctatg	ttnaattcaa	actattcctg	180
ctattcctgt	tttgtcaaag	aaatttatatt	tttcaaaata	tgtntatttg	tttgatgggt	240
cccacgaaac	actaataaaa	accacagaga	ccagcctg			278

<210> 134

<211> 121

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(121)

<223> n = A,T,C or G

<400> 134

gtttanaaaa	cttgtttagc	tccatagagg	aaagaatggt	aaactttgta	ttttaaaaca	60
tgattctctg	agggttaaact	tggttttcaa	atgttatattt	tacttgatt	ttgcttttgg	120
t						121

<210> 135

<211> 350

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(350)

<223> n = A,T,C or G

<400> 135

acttanaacc	atgcctagca	catcagaatc	cctcaaagaa	catcagtata	atcctataacc	60
atancaagtg	gtgactgggt	aagcgtgcga	caaaggctcag	ctggcacatt	acttggtgtgc	120
aaacttgata	cttttgttct	aagtaggaac	tagtatacag	tncctaggan	tggtactcca	180
gggtgcccc	caactcctgc	agccgctcct	ctgtgccagn	ccctgnaagg	aactttcgct	240
ccacctcaat	caagccctgg	gccatgctac	ctgcaattgg	ctgaacaaac	gtttgctgag	300
ttcccaagga	tgcaaagcct	ggtgctcaac	tcctggggcg	tcaactcagt		350

<210> 136
 <211> 399
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(399)
 <223> n = A,T,C or G

<400> 136
 tgtaccgtga agacgacaga agttgcatgg cagggacagg gcagggccga ggccagggtt 60
 gctgtgattg tatccgaata ntccctcgtga gaaaagataa tgagatgacg tgagcagcct 120
 gcagacttgt gtctgccttc aanaagccag acaggaaggc cctgcctgcc ttggctctga 180
 cctggcggcc agccagccag ccacagggtg gcttcttctt tttgtggtga caacnccaag 240
 aaaactgcag agggccaggg tcagggtgna gtgggtangt gaccataaaa caccagggtgc 300
 tcccaggaac ccgggcaaag gccatcccca cctacagcca gcatgcccac tggcgtgatg 360
 ggtgcagang gatgaagcag ccagntgttc tgctgtggt 399

<210> 137
 <211> 165
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(165)
 <223> n = A,T,C or G

<400> 137
 actggtgtgg tngggggtga tgctggtggt anaagttgan gtgacttcan gatggtgtgt 60
 ggaggaagtg tgtgaacgta gggatgtaga ngttttggcc gtgctaaatg agcttcggga 120
 ttggctggtc ccactggtgg tcaactgtcat tggtgggggtt cctgt 165

<210> 138
 <211> 338
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(338)
 <223> n = A,T,C or G

<400> 138
 actcactgga atgccacatt cacaacagaa tcagaggtct gtgaaaacat taatggctcc 60
 ttaacttctc cagtaagaat cagggacttg aaatggaaac gttaacagcc acatgcccac 120
 tgctgggcag tctcccatgc cttccacagt gaaagggctt gagaaaaatc acatccaatg 180
 tcatgtgttt ccagccacac caaaaggtgc ttgggggtgga gggctggggg catananggt 240
 cangcctcag gaagcctcaa gttccattca gctttgccac tgtacattcc ccatntttta 300
 aaaaactgat gccttttttt tttttttttt taaaattc 338

<210> 139
 <211> 382

<212> DNA

<213> Homo sapien

<400> 139

gggaatcttg	gtttttggca	tctggtttgc	ctatagccga	ggccactttg	acagaacaaa	60
gaaagggact	tgcagtaaga	aggtgattta	cagccagcct	agtgcccgaa	gtgaaggaga	120
attcaaacag	acctcgatcat	tcttggtgtg	agcctgggtcg	gctcaccgcc	tatcatctgc	180
atttgcttta	ctcaggtgct	accggactct	ggccccgat	gtctgtagtt	tcacaggatg	240
ccttatttgt	cttctacacc	ccacagggcc	ccctacttct	tcggatgtgt	ttttaataat	300
gtcagctatg	tgccccatcc	tccttcatgc	cctccctccc	tttccacca	ctgctgagtg	360
gcctggaact	tgtttaaagt	gt				382

<210> 140

<211> 200

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (200)

<223> n = A,T,C or G

<400> 140

accaaanctt	ctttctgttg	tgtnngattt	tactataggg	gttnngcttn	ttctaaanat	60
acttttcatt	taacancttt	tgtaagtgt	caggctgcac	tttgctccat	anaattattg	120
ttttcacatt	tcaacttgta	tgtgtttgtc	tcttanagca	ttggtgaaat	cacatatttt	180
atattcagca	taaaggagaa					200

<210> 141

<211> 335

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (335)

<223> n = A,T,C or G

<400> 141

actttatttt	caaaacactc	atatgttgca	aaaaacacat	agaaaaataa	agtttggtgg	60
gggtgctgac	taaacttcaa	gtcacagact	tttatgtgac	agattggagc	agggtttgtt	120
atgcatgtag	agaacccaaa	ctaatttatt	aaacaggata	gaaacaggct	gtctgggtga	180
aatggttctg	agaaccatcc	aattcacctg	tcagatgctg	atanactagc	tcttcagatg	240
tttttctacc	agttcagaga	tnggttaatg	actanttcca	atggggaaaa	agcaagatgg	300
attccaaac	caagtaattt	taaacaaaga	cactt			335

<210> 142

<211> 459

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (459)

<223> n = A,T,C or G

<400> 142

accagggttaa	tattgccaca	tatatacctt	ccaattgcgg	gctaaacaga	cgtgtattta	60
gggttggtta	aagacaaccc	agcttaatat	caagagaaat	tgtgacctt	catggagtat	120
ctgatggaga	aaacactgag	ttttgacaaa	tcttatttta	ttcagatagc	agtctgatca	180
cacatggtcc	aacaacactc	aaataataaa	tcaaataatna	tcagatgtta	aagattggtc	240
ttcaaacatc	atagccaatg	atgccccgct	tgcctataat	ctctccgaca	taaaaccaca	300
tcaaacacctc	agtggccacc	aaaccattca	gcacagcttc	cttaactgtg	agctgtttga	360
agctaccagt	ctgagcacta	ttgactatnt	ttttcanget	ctgaatagct	ctagggatct	420
cagcanggggt	gggaggaacc	agctcaacct	tggcgtant			459

<210> 143

<211> 140

<212> DNA

<213> Homo sapien

<400> 143

acatttcctt	ccaccaagtc	aggactcctg	gcttctgtgg	gagttcttat	cacctgaggg	60
aatccaaac	agtctctcct	agaaaggaat	agtgtcacca	acccaccca	tctccctgag	120
accatccgac	ttccctgtgt					140

<210> 144

<211> 164

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (164)

<223> n = A,T,C or G

<400> 144

acttcagtaa	caacatacaa	taacaacatt	aagtgtatat	tgccatcttt	gtcattttct	60
atctatacca	ctctcccttc	tgaaaacaan	aatcactanc	caatcactta	tacaaatttg	120
aggcaattaa	tccatatttg	ttttcaataa	ggaaaaaaag	atgt		164

<210> 145

<211> 303

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (303)

<223> n = A,T,C or G

<400> 145

acgtagacca	tccaactttg	tatttgtaat	ggcaaacatc	cagnagcaat	tcctaaacaa	60
actggagggt	atttataccc	aattatccca	ttcattaaca	tgccctcttc	ctcagggtat	120
gcaggacagc	tatcataagt	cggccccaggc	atccagatac	taccatttgt	ataaaacttca	180
gtaggggagt	ccatccaagt	gacagggtcta	atcaaaggag	gaaatggaac	ataagcccag	240
tagtaaaatn	ttgcttagct	gaaacagcca	caaaagactt	accgccgtgg	tgattaccat	300
caa						303

<210> 146

<211> 327
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(327)
 <223> n = A,T,C or G

<400> 146
 actgcagctc aattagaagt ggtctctgac ttctcatcanc ttctccctgg gctccatgac 60
 actggcctgg agtgactcat tgctctgggt gggtgagaga gctcctttgc caacaggcct 120
 ccaagtcagg gctgggattt gtttcctttc cacattctag caacaatatg ctggccactt 180
 cctgaacagg gaggggtggga ggagccagca tggaacaagc tgccactttc taaagtagcc 240
 agacttgccc ctgggcctgt cacacctact gatgaccttc tgtgcctgca ggatggaatg 300
 taggggtgag ctgtgtgact ctatgggt 327

<210> 147
 <211> 173
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(173)
 <223> n = A,T,C or G

<400> 147
 acattgtttt tttagataa agcattgana gagctctcct taacgtgaca caatggaagg 60
 actggaacac ataccacat ctttggtctg agggataatt ttctgataaa gtcttgctgt 120
 atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gtt 173

<210> 148
 <211> 477
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(477)
 <223> n = A,T,C or G

<400> 148
 acaaccactt tatctcatcg aatttttaac ccaaactcac tcaactgtgcc ttcttatect 60
 atgggatata ttatttgatg ctccatttca tcacacatat atgaataata cactcatact 120
 gccctactac ctgctgcaat aatcacattc ccttctgtgc ctgaccctga agccattggg 180
 gtggctctag tggccatcag tccangcctg caccttgagc ccttgagctc cattgtcac 240
 nccanccac ctcaccgacc ccatectctt acacagctac ctcttgctc tctaacccca 300
 tagattatnt ccaaattcag tcaattaagt tactattaac actctaccg acatgtccag 360
 caccactggt aagccttctc cagccaacac acacacacac acacnccac acacacatat 420
 ccaggcacag gctacctcat cttcacaatc acccctttaa ttaccatgct atgggtgg 477

<210> 149
 <211> 207
 <212> DNA

<213> Homo sapien

<400> 149

acagttgtat tataatatca agaaataaac ttgcaatgag agcattttaag agggaagaac	60
taacgtatatt tagagagcca aggaagggtt ctgtggggag tgggatgtaa ggtggggcct	120
gatgataaat aagagtcagc caggtaagtg ggtggtgtgg tatgggcaca gtgaagaaca	180
tttcaggcag agggaacagc agtgaaa	207

<210> 150

<211> 111

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (111)

<223> n = A,T,C or G

<400> 150

accttgattt cattgctgct ctgatggaaa cccaactatc taatttagct aaaacatggg	60
cacttaaatg tggtcagtgt ttggacttgt taactantgg catctttggg t	111

<210> 151

<211> 196

<212> DNA

<213> Homo sapien

<400> 151

agcgcggcag gtcatatga acattccaga tacctatcat tactcgatgc tgttgataac	60
agcaagatgg ctttgaactc agggtcacca ccagctattg gaccttacta tgaaaaccat	120
ggataccaac cggaaaaccc ctatccccga cagccactg tggccccac tgtctacgag	180
gtgcatccgg ctcagt	196

<210> 152

<211> 132

<212> DNA

<213> Homo sapien

<400> 152

acagcacttt cacatgtaag aaggagaaaa ttctaaatg taggagaaag ataacagaac	60
cttccccctt tcatctagt gtggaaacct gatgctttat gttgacagga atagaaccag	120
gagggagttt gt	132

<210> 153

<211> 285

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (285)

<223> n = A,T,C or G

<400> 153

acaanaccca nganaggcca ctggccgtgg tgtcatggcc tccaaacatg aaagtgtcag	60
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```

cttctgctct tatgtcctca tctgacaact ctttaccatt tttatcctcg ctcagcagga      120
gcacatcaat aaagtccaaa gtcttggact tggccttggc ttggaggaag tcatcaacac      180
cctggctagt gaggggtgcgg cgccgctcct ggatgacggc atctgtgaag tcgtgcacca      240
gtctgcaggc cctgtggaag cgccgtccac acggagtnag gaatt                        285

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<210> 154
<211> 333
<212> DNA
<213> Homo sapien

```

```

<400> 154
accacagtcc tgttggggcca gggcttcatg accctttctg tgaaaagcca tattatcacc      60
accccaaatt tttccttaaa tatctttaac tgaaggggtc agcctcttga ctgcaaagac      120
cctaagccgg ttacacagct aactccact ggccctgatt tgtgaaattg ctgctgcctg      180
attggcacag gagtcgaagg tgttcagctc ccctcctcgg tggaacgaga ctctgatttg      240
agtttcacaa attctcgggc cacctcgtca ttgctcctct gaaataaaaat ccggagaatg      300
gtcaggcctg tctcatccat atggatcttc cgg                                           333

```

```

<210> 155
<211> 308
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(308)
<223> n = A,T,C or G

```

```

<400> 155
actggaaata ataaaaccca catcacagtg ttgtgtcaaa gatcatcagg gcatggatgg      60
gaaagtgctt tgggaactgt aaagtgccta acacatgatt gatgattttt gttataatat      120
ttgaatcacg gtgcatacaa actctcctgc ctgctcctcc tgggccccag cccagcccc      180
atcacagctc actgctctgt tcatccaggc ccagcatgta gtggctgatt cttcttggct      240
gcttttagcc tccanaagtt tctctgaagc caaccaaacc tctangtgta aggcattgctg      300
gccctggg                                           308

```

```

<210> 156
<211> 295
<212> DNA
<213> Homo sapien

```

```

<400> 156
accttgctcg gtgcttggaa catattagga actcaaaata tgagatgata acagtgccta      60
ttattgatta ctgagagAAC tgttagacat ttagttgaag attttctaca caggaactga      120
gaataggaga ttatgtttgg ccctcatatt ctctcctatc ctccttgect cattctatgt      180
ctaatatatt ctcaatcaaa taagggttagc ataatcagga aatcgaccaa ataccaatat      240
aaaaccagat gtctatcctt aagattttca aatagaaaac aaattaacag actat           295

```

```

<210> 157
<211> 126
<212> DNA
<213> Homo sapien

```

```

<400> 157
acaagtttaa atagtgtgt cactgtgcat gtgctgaaat gtgaaatcca ccacatttct      60

```

gaagagcaaa acaaattctg tcatgtaatc tctatcttgg gtcgtgggta tatctgtccc 120
cttagt 126

<210> 158
<211> 442
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(442)
<223> n = A,T,C or G

<400> 158
accactggt cttggaaaca cccatcctta atacgatgat ttttctgtcg tgtgaaaatg 60
aanccagcag gctgccccta gtcagtcctt ccttccagag aaaaagagat ttgagaaagt 120
gcctgggtaa ttcaccatta atttcctccc ccaaactctc tgagtcttcc cttaatatatt 180
ctggtggttc tgaccaaagc aggtcatggt ttgttgagca tttgggatcc cagtgaagta 240
natgtttgta gccttgcata cttagccctt cccacgcaca aacggagtgg cagagtgggtg 300
ccaaccctgt tttcccagtc cacgtagaca gattcacagt gcggaattct ggaagctgga 360
nacagacggg ctctttgcag agccgggact ctgagangga catgagggcc tctgcctctg 420
tgttcattct ctgatgtcct gt 442

<210> 159
<211> 498
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(498)
<223> n = A,T,C or G

<400> 159
acttccaggt aacgttggtg tttccggtga gcctgaactg atgggtgacg ttgtaggttc 60
tccaacaaga actgaggttg cagagcgggt agggaagagt gctgttccag ttgcacctgg 120
gctgctgtgg actgttggtg attcctcact acggcccaag gttgtggaac tggcanaaag 180
gtgtgtgtgt gganttgagc tcgggcggt gtggtaggtt gtgggtctct caacaggggc 240
tgctgtggtg ccgggangtg aangtggtgt gtcacttgag ctgggccagc tctggaaaagt 300
antanattct tcctgaaggc cagcgcttgt ggagctggca ngggtcantg ttgtgtgtaa 360
cgaaccagtg ctgctgtggg tgggtgtana tcctccacaa agcctgaagt tatggtgtcn 420
tcaggtana atgtggtttc agtgtccctg ggcngctgtg gaaggttgta nattgtcacc 480
aagggaataa gctgtggt 498

<210> 160
<211> 380
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(380)
<223> n = A,T,C or G

<400> 160

```

acctgcatcc agcttccctg ccaaactcac aaggagacat caacctctag acagggaaac      60
agcttcagga tacttccagg agacagagcc accagcagca aaacaaatat tcccatgcct      120
ggagcatggc atagaggaag ctganaaatg tgggggtctga ggaagccatt tgagtctggc      180
cactagacat ctcatcagcc acttgtgtga agagatgccc catgacccca gatgcctctc      240
ccacccttac ctccatctca cacacttgag ctttccactc tgtataattc taacatcctg      300
gagaaaaatg gcagtttgac cgaacctgtt cacaacggta gaggctgatt tctaacgaaa      360
cttgtagaat gaagcctgga                                     380

```

<210> 161

<211> 114

<212> DNA

<213> Homo sapien

<400> 161

```

actccacatc ccctctgagc aggcgggtgt cgttcaagggt gtatttggcc ttgcctgtca      60
cactgtccac tggcccctta tccacttggt gcttaatccc tcgaaagagc atgt          114

```

<210> 162

<211> 177

<212> DNA

<213> Homo sapien

<400> 162

```

actttctgaa tcgaatcaaa tgatacttag tgtagtttta atatcctcat atatatcaaa      60
gttttactac tctgataatt ttgtaaacca ggtaaccaga acatccagtc atacagcttt      120
tggtgatata taacttggca ataaccagc ctggtgatac ataaaactac tcactgt          177

```

<210> 163

<211> 137

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (137)

<223> n = A,T,C or G

<400> 163

```

catttataca gacaggcgtg aagacattca cgacaaaaac gcgaaattct atcccgtgac      60
canagaaggc agctacggct actcctacat cctggcgtgg gtggccttcg cctgcacctt      120
catcagcggc atgatgt                                     137

```

<210> 164

<211> 469

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (469)

<223> n = A,T,C or G

<400> 164

```

cttatcacia tgaatgttct cctgggcagc gttgtgatct ttgccacctt cgtgacttta      60
tgcaatgcat catgctatct catacctaag gagggagttc caggagattc aaccaggaaa      120

```

tgcattggatc	tcaaaggaaa	caaacaccca	ataaactcgg	agtggcagac	tgacaactgt	180
gagacatgca	cttgctacga	aacagaaatt	tcattgttgc	cccttgtttc	tacacctgtg	240
ggttatgaca	aagacaactg	ccaaagaatc	ttcaagaagg	aggactgcaa	gtatatcggt	300
gtggagaaga	aggacccaaa	aaagacctgt	tctgtcagtg	aatggataat	ctaattgtgt	360
tctagtaggc	acagggctcc	caggccaggc	ctcattctcc	tctggcctct	aatagtcaat	420
gattgtgtag	ccatgcctat	cagtaaaaag	atntttgagc	aaacactttt		469

<210> 165

<211> 195

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (195)

<223> n = A,T,C or G

<400> 165

acagtttttt	atanatatcg	acattgccgg	cacttgtgtt	cagtttcata	aagctgggtg	60
atccgctgtc	atccactatt	ccttggttag	agtaaaaatt	attcttatag	cccatgtccc	120
tgcagccgcg	ccgcccgtag	ttctcggtcc	agtcgtcttg	gcacacaggg	tgccaggact	180
tcctctgaga	tgagt					195

<210> 166

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (383)

<223> n = A,T,C or G

<400> 166

acattcttagt	agtgtggcac	atcagggggc	catcagggtc	acagtcactc	atagcctcgc	60
cgagggtcga	gtccacacca	ccggtgtagg	tgtgtcfaat	cttgggcttg	gcgcccacct	120
ttggagaagg	gatatgctgc	acacacatgt	ccacaaagcc	tgtgaactcg	ccaaagaatt	180
tttgcagacc	agcctgagca	aggggaggat	gttcagcttc	agctcctcct	tcgtcagggtg	240
gatgccaacc	tcgtctangg	tccgtgggaa	gctgggtgtc	acntcaccta	caacctgggc	300
gangatctta	taaagaggct	ccnagataaa	ctccacgaaa	cttctctggg	agctgctagt	360
nggggccttt	ttggtgaact	ttc				383

<210> 167

<211> 247

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (247)

<223> n = A,T,C or G

<400> 167

acagagccag	accttggcca	taaatgaanc	agagattaag	actaaacccc	aagtcganat	60
tggagcagaa	actggagcaa	gaagtgggccc	tggggctgaa	gtagagacca	aggccactgc	120

tatanccata cacagagcca actctcaggc caaggcnatg gttggggcag anccagagac	180
tcaatctgan tccaaagtgg tggctggaac actgggtcatg acanaggcag tgactctgac	240
tgangtc	247

<210> 168
 <211> 273
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(273)
 <223> n = A,T,C or G

<400> 168	
acttctaagt tttctagaag tggaaggatt gtantcatcc tgaaaatggg tttacttcaa	60
aatccctcan ccttggtctt cactactgtc tatactgana gtgtcatgtt tccacaaaagg	120
gctgacacct gagcctgnat tttcactcat ccctgagaag ccctttccag taggggtgggc	180
aattcccaac ttccttgcca caagcttccc aggttttctc ccctggaaaa ctccagcttg	240
agtcccagat acactcatgg gctgcccctgg gca	273

<210> 169
 <211> 431
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(431)
 <223> n = A,T,C or G

<400> 169	
acagccttgg cttccccaaa ctccacagtc tcagtgcaga aagatcatct tccagcagtc	60
agctcagacc aggggtcaaag gatgtgacat caacagtttc tggtttcaga acaggttcta	120
ctactgtcaa atgaccccc atacttcctc aaaggctgtg gtaagttttg cacagggtgag	180
ggcagcagaa aggggggtant tactgatgga caccatcttc tctgtatact ccacactgac	240
cttgccatgg gcaaaggccc ctaccacaaa aacaatagga tcactgctgg gcaccagctc	300
acgcacatca ctgacaaccg ggatggaaaa agaantgcca actttcatac atccaactgg	360
aaagtgatct gatactggat tcttaattac cttcaaaaagc ttctgggggc catcagctgc	420
tcgaacactg a	431

<210> 170
 <211> 266
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(266)
 <223> n = A,T,C or G

<400> 170	
acctgtgggc tgggctgtta tgcctgtgcc ggctgctgaa agggagttca gaggtggagc	60
tcaaggagct ctgcaggcat ttgccaanc ctctccanag canaggggagc aacctacact	120
ccccgctaga aagacaccag attggagtc tgggaggggg agttgggggtg ggcatttgc	180

gtatacttgt cacctgaatg aangagccag agaggaanga gacgaanatg anattggcct 240
tcaaagctag gggctctggca ggtgga 266

<210> 171

<211> 1248

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1248)

<223> n = A,T,C or G

<400> 171

ggcagccaaa tcataaacgg cgaggactgc agcccgcact cgcagccctg gcaggcggca 60
ctggctcatg aaaacgaatt gttctgctcg ggcgtcctgg tgcattccgca gtgggtgctg 120
tcagccgcac actgtttcca gaagtgaagt cagagctcct acaccatcgg gctgggcctg 180
cacagtcttg aggccgacca agagccaggg agccagatgg tggaggccag cctctccgta 240
cggcaccag agtacaacag acccttgctc gctaacgacc tcatgctcat caagttggac 300
gaatccgtgt ccgagtctga caccatccgg agcatcagca ttgcttcgca gtgccctacc 360
gcggggaact cttgcctcgt ttctggctgg ggtctgctgg cgaacggcag aatgcctacc 420
gtgctgcagt gcgtgaacgt gtcggtggtg tctgaggagg tctgcagtaa gctctatgac 480
ccgctgtacc accccagcat gttctgcgcc ggaggaggc aagaccagaa ggactcctgc 540
aacggtgact ctggggggcc cctgatctgc aacgggtact tgcagggcct tgtgtctttc 600
ggaaaagccc cgtgtggcca agttggcgtg ccaggtgtct acaccaacct ctgcaaattc 660
actgagtggg tagagaaaac cgtccaggcc agttaactct ggggactggg aacctatgaa 720
attgaccccc aaatacatcc tgcggaagga attcaggaat atctgttccc agcccctcct 780
ccctcaggcc caggagtcca ggccccagc ccctcctccc tcaaaccaag ggtacagatc 840
cccagccct cctccctcag acccaggagt ccagaccccc cagccctcc tccctcagac 900
ccaggagtcc agccctcct cctcagacc caggagtcca gacccccag cccctcctcc 960
ctcagaccca ggggtccagg cccccaaccc ctccctccctc agactcagag gtccaagccc 1020
ccaaccntc attccccaga cccagaggtc caggtcccag cccctcntcc ctcagaccca 1080
gcggtccaat gccacctaga ctntccctgt acacagtccc cccttgtggc acgttgaccc 1140
aaccttacca gttggttttt catttttngt ccctttcccc tagatccaga aataaagttt 1200
aagagaagng caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1248

<210> 172

<211> 159

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(159)

<223> Xaa = Any Amino Acid

<400> 172

Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro
1 5 10 15
Leu Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser
20 25 30
Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr
35 40 45
Ala Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly
50 55 60

Arg Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu
 65 70 75 80
 Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe
 85 90 95
 Cys Ala Gly Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser
 100 105 110
 Gly Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe
 115 120 125
 Gly Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn
 130 135 140
 Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 145 150 155

<210> 173
 <211> 1265
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(1265)
 <223> n = A,T,C or G

<400> 173
 ggcagccccgc actcgcagcc ctggcaggcg gcactgggtca tggaaaacga attgttctgc 60
 tcggggcgctcc tgggtgcatcc gcagtgggtg ctgtcagccg cacactgttt ccagaactcc 120
 tacaccatcg ggctgggcct gcacagtctt gagggccgacc aagagccagg gagccagatg 180
 gtggaggcca gcctctccgt acggcaccca gagtacaaca gacccttgct cgctaacgac 240
 ctcatgctca tcaagttgga cgaatccgtg tccgagtctg acaccatccg gagcatcagc 300
 attgcttcgc agtgccctac cgcggggaac tcttgccctg tttctggctg ggggtctgctg 360
 gcgaacgggtg agctcacggg tgtgtgtctg ccctcttcaa ggaggtcctc tgcccagtcg 420
 cgggggctga cccagagctc tgcgtcccag gcagaatgcc taccgtgctg cagtgcgtga 480
 acgtgtcggg ggtgtctgag gaggtctgca gtaagctcta tgacccgctg taccaccca 540
 gcatgttctg cgccggcgga gggcaagacc agaaggactc ctgcaacggg gactctgggg 600
 ggccccctgat ctgcaacggg tacttgagg gccttgtgtc tttcggaaaa gccccgtgtg 660
 gccaaagtgg cgtgccagggt gtctacacca acctctgcaa attcactgag tggatagaga 720
 aaaccgtcca ggccagttaa ctctggggac tgggaaccca tgaaattgac ccccaaatac 780
 atcctgcgga aggaattcag gaatatctgt tcccagcccc tcctccctca ggcccaggag 840
 tccaggcccc cagcccctcc tccctcaaac caagggtaca gatccccagc ccctcctccc 900
 tcagacccag gagtccagac cccccagccc ctctcctc agacccagga gtccagcccc 960
 tcctccntca gacccaggag tccagacccc ccagcccctc ctccctcaga cccagggggtt 1020
 gaggccccca acccctcctc cttcagagtc agaggtccaa gcccccaacc cctcgttccc 1080
 cagacccaga ggttnaggtc ccagcccctc ttcntcaga cccagnngtc caatgccacc 1140
 tagattttcc ctgnacacag tgcccccttg tggngangttg acccaacctt accagttggt 1200
 ttttcatttt tngtcccttt cccctagatc cagaaataaa gtttaagaga ngngcaaaaa 1260
 aaaaa 1265

<210> 174
 <211> 1459
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(1459)

<223> n = A,T,C or G

<400> 174

ggtcagccgc	acactgtttc	cagaagtgag	tgcagagctc	ctacaccatc	gggctgggcc	60
tgcacagtct	tgaggccgac	caagagccag	ggagccagat	ggtggaggcc	agcctctccg	120
tacggcacc	agagtacaac	agacccttgc	tcgctaacga	cctcatgctc	atcaagttag	180
acgaatccgt	gtccgagtct	gacaccatcc	ggagcatcag	cattgcttcg	cagtgcctta	240
ccgcggggaa	ctcttgcttc	gtttctggct	ggggtctgct	ggcgaacggt	gagctcacgg	300
gtgtgtgtct	gccctcttca	aggaggtcct	ctgcccagtc	gcgggggctg	acccagagct	360
ctgcgtccca	ggcagaatgc	ctaccgtgct	gcagtgcgtg	aacgtgtcgg	tggtgtctga	420
ngaggtctgc	antaagctct	atgaccctgc	gtaccacccc	ancatgttct	gcgccggcgg	480
agggcaagac	cagaaggact	cctgcaacgt	gagagagggg	aaaggggagg	gcaggcgact	540
caggggaagg	tggagaagg	ggagacagag	acacacaggg	ccgcatggcg	agatgcagag	600
atggagagac	acacagggag	acagtgacaa	ctagagagag	aaactgagag	aaacagagaa	660
ataaacacag	gaataaagag	aagcaaagga	agagagaaac	agaaacagac	atggggaggc	720
agaaacacac	acacatagaa	atgcagttga	ccttccaaca	gcatggggcc	tgaggggcgt	780
gacctccacc	caatagaaaa	tcctcttata	acttttgact	ccccaaaaac	ctgactagaa	840
atagcctact	gttgacgggg	agccttacca	ataacataaa	tagtcgattt	atgcatacgt	900
tttatgcatt	catgatatac	ctttgttgga	attttttgat	attttctaag	tacacagttc	960
gtctgtgaat	ttttttaaat	tggtgcaact	ctcctaaaat	ttttctgatg	tgtttattga	1020
aaaaatccaa	gtataagtgg	acttgtgcat	tcaaaccagg	gttgttcaag	ggtcaactgt	1080
gtaccagag	ggaaacagtg	acacagattc	atagaggtga	aacacgaaga	gaaacaggaa	1140
aaatcaagac	tctacaaaga	ggctgggcag	ggtgggtcat	gcctgtaatc	ccagcacttt	1200
gggaggcgag	gcaggcagat	cacttgaggt	aaggagttca	agaccagcct	ggccaaaatg	1260
gtgaaatcct	gtctgtacta	aaaatacaaa	agttagctgg	atatggtggc	aggcgccctgt	1320
aatcccagct	acttgggagg	ctgaggcagg	agaattgctt	gaatatggga	ggcagaggtt	1380
gaagtgagtt	gagatcacac	cactatactc	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaaa	aaaaaaaaa					1459

<210> 175

<211> 1167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1167)

<223> n = A,T,C or G

<400> 175

gcgcagccct	ggcaggcgcc	actggctcatg	gaaaacgaat	tggtctgctc	gggcgtcctg	60
gtgcatccgc	agtgggtgct	gtcagccgca	cactgtttcc	agaactccta	caccatcggg	120
ctgggcctgc	acagtcttga	ggccgaccaa	gagccaggga	gccagatggg	ggaggccagc	180
ctctccgtac	ggcaccacga	gtacaacaga	ctcttgctcg	ctaaccgacct	catgctcatc	240
aagttggacg	aatccgtgtc	cgagtctgac	accatccgga	gcatcagcat	tgcttcgcag	300
tgcctaccg	cggggaaactc	ttgcctcgtn	tctggctggg	gtctgctggc	gaacggcaga	360
atgcctaccg	tgctgcactg	cgtgaacgtg	tcgggtggtg	ctgaggangt	ctgcagtaag	420
ctctatgacc	cgctgtacca	ccccagcatg	ttctgcgccg	gcggaggggca	agaccagaag	480
gactcctgca	acggtgactc	tgggggggccc	ctgatctgca	acgggtactt	gcagggcctt	540
gtgtctttcg	gaaaagcccc	gtgtggccaa	cttggcgtgc	caggtgtcta	caccaacctc	600
tgcaaatcca	ctgagtggat	agagaaaacc	gtccagncca	gttaactctg	gggactggga	660
acccatgaaa	ttgaccccca	aatacatcct	gcggaangaa	ttcaggaata	tctgttccca	720
gccccctctc	cctcaggccc	aggagtccag	gccccagcc	cctcctccct	caaaccaagg	780
gtacagatcc	ccagccccctc	ctccctcaga	cccaggagtc	cagaccccc	agccccctct	840
ccntcagacc	caggagtcca	gccccctctc	cntcagacgc	aggagtccag	acccccagc	900

```

ccntcntccg tcagacccag ggggtgcaggc ccccaacccc tcntccntca gagtcagagg      960
tccaagcccc caacccctcg ttccccagac ccagaggtnc aggtcccagc ccctcctccc      1020
tcagacccag cgggtccaatg ccacctagan tntccctgta cacagtgcgc ccttgtggca      1080
ngttgaccca accttaccag ttgggtttttc attttttgtc cctttcccct agatccagaa      1140
ataaagtnta agagaagcgc aaaaaaa      1167

```

<210> 176

<211> 205

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(205)

<223> Xaa = Any Amino Acid

<400> 176

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1          5          10          15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20          25          30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35          40          45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Leu Leu Leu
 50          55          60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65          70          75          80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85          90          95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met
100          105          110
Pro Thr Val Leu His Cys Val Asn Val Ser Val Val Ser Glu Xaa Val
115          120          125
Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala
130          135          140
Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly
145          150          155          160
Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys
165          170          175
Ala Pro Cys Gly Gln Leu Gly Val Pro Gly Val Tyr Thr Asn Leu Cys
180          185          190
Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Xaa Ser
195          200          205

```

<210> 177

<211> 1119

<212> DNA

<213> Homo sapien

<400> 177

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gcgcactcgc agccctggca ggcggcactg gtcattgaaa acgaattgtt ctgctcgggc      60
gtcctggtgc atccgcagtg ggtgctgtca gccgcacact gtttccagaa ctccctacacc      120
atcgggctgg gcctgcacag tcttgaggcc gaccaagagc cagggagcca gatgggtggag      180
gccagcctct ccgtacggca cccagagtac aacagaccct tgctcgctaa cgacctcatg      240
ctcatcaagt tggacgaatc cgtgtccgag tctgacacca tccggagcat cagcattgct      300

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tcgcagtgcc	ctaccgcggg	gaactcttgc	ctcgtttctg	gctgggggtct	gctggcgaac	360
gatgctgtga	ttgccatcca	gtcccagact	gtgggaggct	gggagtgtga	gaagctttcc	420
caaccctggc	agggttgtac	catttcggca	acttccagt	caaggacgtc	ctgctgcatc	480
ctcactgggt	gctcactact	gctcactgca	tcacccgga	cactgtgatc	aactagccag	540
caccatagtt	ctccgaagtc	agactatcat	gattactgtg	ttgactgtgc	tgtctattgt	600
actaaccatg	ccgatgttta	ggtgaaatta	gcgtcacttg	gcctcaacca	tcttggtatc	660
cagttatcct	cactgaattg	agatttcctg	cttcagtgtc	agccattccc	acataatttc	720
tgacctacag	aggtagggga	tcatatagct	cttcaaggat	gctggtactc	ccctcacaaa	780
ttcattttctc	ctggtgtagt	gaaagggtgcg	ccctctggag	cctcccaggg	tgggtgtgca	840
ggtcacaatg	atgaatgtat	gatcgtgttc	ccattaccca	aagcctttaa	atccctcatg	900
ctcagtagac	cagggcaggt	ctagcatttc	ttcatttagt	gtatgctgtc	cattcatgca	960
accacctcag	gactcctgga	ttctctgcct	agttgagctc	ctgcatgctg	cctccttggg	1020
gaggtgaggg	agagggccca	tgggtcaatg	ggatctgtgc	agttgtaaca	cattaggtgc	1080
ttaataaaca	gaagctgtga	tgtaaaaaa	aaaaaaaaa			1119

<210> 178

<211> 164

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(164)

<223> Xaa = Any Amino Acid

<400> 178

Met	Glu	Asn	Glu	Leu	Phe	Cys	Ser	Gly	Val	Leu	Val	His	Pro	Gln	Trp
1				5					10					15	
Val	Leu	Ser	Ala	Ala	His	Cys	Phe	Gln	Asn	Ser	Tyr	Thr	Ile	Gly	Leu
			20					25					30		
Gly	Leu	His	Ser	Leu	Glu	Ala	Asp	Gln	Glu	Pro	Gly	Ser	Gln	Met	Val
		35				40					45				
Glu	Ala	Ser	Leu	Ser	Val	Arg	His	Pro	Glu	Tyr	Asn	Arg	Pro	Leu	Leu
	50				55						60				
Ala	Asn	Asp	Leu	Met	Leu	Ile	Lys	Leu	Asp	Glu	Ser	Val	Ser	Glu	Ser
65				70					75					80	
Asp	Thr	Ile	Arg	Ser	Ile	Ser	Ile	Ala	Ser	Gln	Cys	Pro	Thr	Ala	Gly
			85					90					95		
Asn	Ser	Cys	Leu	Val	Ser	Gly	Trp	Gly	Leu	Leu	Ala	Asn	Asp	Ala	Val
			100					105					110		
Ile	Ala	Ile	Gln	Ser	Xaa	Thr	Val	Gly	Gly	Trp	Glu	Cys	Glu	Lys	Leu
		115				120						125			
Ser	Gln	Pro	Trp	Gln	Gly	Cys	Thr	Ile	Ser	Ala	Thr	Ser	Ser	Ala	Arg
	130					135					140				
Thr	Ser	Cys	Cys	Ile	Leu	Thr	Gly	Cys	Ser	Leu	Leu	Leu	Thr	Ala	Ser
145				150						155				160	
Pro	Gly	Thr	Leu												

<210> 179

<211> 250

<212> DNA

<213> Homo sapien

<400> 179

ctggagtgcc	ttggtgtttc	aagccccctgc	aggaagcaga	atgcaccttc	tgaggcacct	60
ccagctgccc	ccggccgggg	gatgcgagge	tcggagcacc	cttgcccggc	tgtgattgct	120
gccaggcact	gttcatctca	gcttttctgt	ccctttgctc	ccggcaagcg	cttctgctga	180
aagttcatat	ctggagcctg	atgtcttaac	gaataaaggt	cccatgctcc	acccgaaaaa	240
aaaaaaaaaa						250

<210> 180

<211> 202

<212> DNA

<213> Homo sapien

<400> 180

actagtccag	tgtggtggaa	ttccattgtg	ttggggcccaa	cacaatggct	acctttaaca	60
tcacccagac	cccgcccctg	cccgtgcccc	acgctgctgc	taacgacagt	atgatgctta	120
ctctgctact	cggaaactat	ttttatgtaa	ttaatgtatg	ctttcttggt	tataaatgcc	180
tgattttaaaa	aaaaaaaaaa	aa				202

<210> 181

<211> 558

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (558)

<223> n = A,T,C or G

<400> 181

tccttttght	naggtttkkg	agacamcccck	agacctwaan	ctgtgtcaca	gacttcyngg	60
aatgttttagg	cagtgttagt	aatttcytcg	taatgattct	gttattactt	tcctnattct	120
ttattcctct	ttcttctgaa	gattaatgaa	gttgaaaatt	gaggtggata	aatacaaaaa	180
ggtagtgtga	tagtataagt	atctaagtcg	agatgaaagt	gtgttatata	tatccattca	240
aaattatgca	agttagtaat	tactcagggg	taactaaatt	actttaatat	gctggtgaac	300
ctactctggt	ccttggctag	aaaaaattat	aaacaggact	ttgttagttt	gggaagccaa	360
attgataata	ttctatgttc	taaaagttgg	gctatacata	aattattaag	aaatatggaw	420
ttttattccc	aggaatatgg	kgttcatttt	atgaatatta	cscrggatag	awgtwtgagt	480
aaaaycagtt	ttggtwaata	ygtwaatatg	tcmtaaataa	acaakgcttt	gacttatttc	540
caaaaaaaaa	aaaaaaaaa					558

<210> 182

<211> 479

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (479)

<223> n = A,T,C or G

<400> 182

acagggwttk	grggatgcta	agsccccrga	rwtygtttga	tccaaccctg	gcttwttttc	60
agaggggaaa	atggggccta	gaagttacag	mecatytagy	tggtgcgmtg	gcacccctgg	120
cstcacacag	astcccaggt	agctgggact	acaggcacac	agtcactgaa	gcaggccctg	180
ttwgcaattc	acgttgccac	ctccaactta	aacattcttc	atatgtgatg	tccttagtca	240
ctaagggttaa	actttccccc	ccagaaaagg	caacttagat	aaaatcttag	agtactttca	300

tactmttcta agtcctcttc cagcctcact kkgagtcctm cytggggggt gataggaant	360
ntctcttggc tttctcaata aartctctat ycatctcatg ttttaatttg tacgcataara	420
awtgstgara aaattaaaat gttctgggtt macttttaaaa araaaaaaaa aaaaaaaaaa	479

<210> 183

<211> 384

<212> DNA

<213> Homo sapien

<400> 183

aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactggtgcc	60
agtaccagta ccaataacag tgccagtgcc agtgccagca ccagtgggtg cttcagtgtc	120
ggtgccagcc tgaccgccac tctcacattt gggctcttcg ctggccttg tggagctggt	180
gccagcacca gtggcagctc tggtgccgtg ggtttctcct acaagtgaga ttttagatat	240
tgtaatcct gccagtcttt ctcttcaagc cagggtgcat cctcagaaac ctactcaaca	300
cagcactcta ggcagccact atcaatcaat tgaagttgac actctgcatt aratctattt	360
gccatttcaa aaaaaaaaaa aaaa	384

<210> 184

<211> 496

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(496)

<223> n = A,T,C or G

<400> 184

accgaattgg gaccgctggc ttataagcga tcatgtyynt ccrgtatkac ctcaacgagc	60
agggagatcg agtctatacg ctgaagaaat ttgacccgat gggacaacag acctgctcag	120
cccatcctgc tcggttctcc ccagatgaca aatactctsg acaccgaatc accatcaaga	180
aacgcttcaa ggtgctcatg acccagcaac cgcgcctgt cctctgaggg tcccttaaac	240
tgatgtcttt tctgccacct gttacccttc ggagactccg taaccaaaact cttcggactg	300
tgagccctga tgcctttttg ccagccatac tctttggcat ccagtctctc gtggcgattg	360
attatgcttg tgtgaggcaa tcatgggtggc atcaccata aagggaacac atttgacttt	420
tttttctcat attttaaatt actacmagaw tattwmagaw waaatgawtt gaaaaactst	480
taaaaaaaaa aaaaaa	496

<210> 185

<211> 384

<212> DNA

<213> Homo sapien

<400> 185

gctggtagcc tatggcgkgg ccacagggagg ggctcctgag gccacggrac agtgacttcc	60
caagtatcyt gcgcsgcgtc ttctaccgtc cctacctgca gatcttcggg cagattcccc	120
aggaggacat ggacgtggcc ctcatggagc acagcaactg ytcgtcggag cccggcttct	180
gggcacaccc tcttggggcc caggcgggca cctgcgtctc ccagtatgcc aactggctgg	240
tggtgctgct cctcgtcatc ttctgtctcg tggccaacat cctgctgggc aacttgctca	300
ttgccatgtt cagttacaca ttcggcaaag tacagggcaa cagcgatctc tactgggaag	360
gcgcagcgtt accgcctcat ccgg	384

<210> 186

<211> 577

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (577)

<223> n = A,T,C or G

<400> 186

gagttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatcgctc	atactgtagg	tttgccacca	cytcctggca	tcttggggcg	gcntaatatt	120
ccaggaaact	ctcaatcaag	tcaccgctga	tgaaacctgt	gggctgggtc	tgtcttccgc	180
tcggtgtgaa	aggatctccc	agaaggagtg	ctcgatcttc	cccacacttt	tgatgacttt	240
attgagtcga	ttctgcatgt	ccagcaggag	gttgtagcag	ctctctgaca	gtgagggtcac	300
cagccctatc	atgccgttga	mcgtgccgaa	garcaccgag	ccttgtgtgg	gggkkgaaagt	360
ctcaccacga	ttctgcatta	ccagagagcc	gtggcaaaaag	acattgacaa	actcgcccag	420
gtggaaaaag	amcamctcct	ggargtgctn	gccgctcttc	gtcmgttggt	ggcagcgctw	480
tccttttgac	acacaaacaa	gttaaaggca	ttttcagccc	ccagaaantt	gtcatcatcc	540
aagatntcgc	acagcactna	tccagttggg	attaaat			577

<210> 187

<211> 534

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (534)

<223> n = A,T,C or G

<400> 187

aacatcttcc	tgtataatgc	tgtgtaatat	cgatccgatn	ttgtctgstg	agaatycatw	60
actkggaaaa	gmaacattaa	agcctggaca	ctgggtattaa	aattcacaa	atgcaacact	120
ttaaacagtg	tgtcaatctg	ctcccyynac	tttgtcatca	ccagtctggg	aakaagggtta	180
tgccctattc	acacctgtta	aaagggcgct	aagcattttt	gattcaacat	cttttttttt	240
gacacaagtc	cgaaaaaagc	aaaagtaaac	agttatyaat	ttgttagcca	attcactttc	300
ttcatgggac	agagccatyt	gatttaaaaa	gcaaattgca	taatattgag	cttyggggagc	360
tgatatttga	gcggaagagt	agcctttteta	cttcaccaga	cacaactccc	tttcatattg	420
ggatgttnac	naaagtwatg	tctctwacag	atgggatgct	tttgtggcaa	ttctgttctg	480
aggatctccc	agtttattta	ccacttgcac	aagaaggcgt	tttcttcttc	aggc	534

<210> 188

<211> 761

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (761)

<223> n = A,T,C or G

<400> 188

agaaaccagt	atctctnaaa	acaacctctc	ataccttggtg	gacctaat	ttgtgtgcgtg	60
tgtgtgtgcg	cgcattattat	atagacaggc	acatcttttt	tacttttgta	aaagcttatg	120
cctcttttgg	atctatatct	gtgaaagttt	taatgatctg	ccataatgtc	ttggggacct	180

ttgtcttctg	tgtaaagtgt	actagagaaa	acacctatnt	tatgagtcaa	tctagttngt	240
tttattcgac	atgaaggaaa	tttccagatn	acaacactna	caaactctcc	ctkgackarg	300
ggggacaaaag	aaaagcaaaa	ctgamcataa	raaacaatwa	cctggtgaga	arttgcataa	360
acagaaatwr	ggtagtatat	tgaarnacag	catcattaaa	rmgttwtktt	wtctccctt	420
gcaaaaaaca	tgtaacngact	tcccgttgag	taatgccaag	ttgttttttt	tatnataaaa	480
cttgcccttc	attacatggt	tnaaagtggg	gtgggtgggg	aaaatattga	aatgatggaa	540
ctgactgata	aagctgtaca	aataagcagt	gtgcctaaca	agcaacacag	taatgttgac	600
atgcttaatt	cacaaatgct	aatttcatta	taaatgtttg	ctaaaataca	ctttgaacta	660
ttttctctgn	ttcccagagc	tgagatntta	gattttatgt	agtatnaagt	gaaaaantac	720
gaaaataata	acattgaaga	aaaananaaa	aaanaaaaaa	a		761

<210> 189

<211> 482

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(482)

<223> n = A,T,C or G

<400> 189

tttttttttt	tttgccgatn	ctactatttt	attgcaggan	gtgggggtgt	atgcaccgca	60
caccgggggt	atnagaagca	agaaggaagg	agggagggca	cagccccttg	ctgagcaaca	120
aagccgcctg	ctgcccttct	tgtctgtctc	ctgggtgcagg	cacatgggga	gaccttcccc	180
aaggcagggg	ccaccagtcc	aggggtggga	atacaggggg	tgggangtgt	gcataagaag	240
tgataggcac	agccaccctg	gtacagaccc	ctcggtctct	gacaggtnga	tttcgaccag	300
gtcattgtgc	cctgcccagg	cacagcgtn	atctggaaaa	gacagaatgc	tttccctttc	360
aaatttggt	ngtcatngaa	ngggcanttt	tccaanttng	gctnggtctt	ggtacncttg	420
gttcggccca	gctccncgtc	caaaaantat	tcaccennct	ccnaattgct	tgcnngnccc	480
cc						482

<210> 190

<211> 471

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(471)

<223> n = A,T,C or G

<400> 190

tttttttttt	ttttaaaaca	gtttttcaca	acaaaattta	ttagaagaat	agtggttttg	60
aaaactctcg	catccagtga	gaactaccat	acaccacatt	acagctngga	atgtnctcca	120
aatgtctggg	caaattgatac	aatggaacca	ttcaattctta	cacatgcacg	aaagaacaag	180
cgcttttgac	atacaatgca	caaaaaaaaa	aggggggggg	gaccacatgg	attaaaattt	240
taagtactca	tcacatacat	taagacacag	ttctagtcca	gtcnaaaatc	agaactgcnt	300
tgaaaaattt	catgtatgca	atccaaccaa	agaacttnat	tggtgatcat	gantnctcta	360
ctacatcnac	cttgatcatt	gccaggaacn	aaaagttnaa	ancacnngt	acaaaaanaa	420
tctgtaattn	anttcaacct	ccgtacngaa	aaatnttnnt	tatacactcc	c	471

<210> 191

<211> 402

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(402)

<223> n = A,T,C or G

<400> 191

gagggattga	aggtctgttc	tastgtcggm	ctgttcagcc	accaactcta	acaagttgct	60
gtcttccact	cactgtctgt	aagcttttta	acccagacwg	tatcttcata	aatagaacaa	120
attcttcacc	agtcacatct	tctaggacct	ttttggattc	agttagtata	agctcttcca	180
cttcctttgt	taagacttca	tctggtaaag	tcttaagttt	tgtagaaagg	aattyaattg	240
ctcgttctct	aacaatgtcc	tctccttgaa	gtatttggct	gaacaacca	cctaaagtcc	300
ctttgtgcat	ccattttaaa	tatacttaat	agggcattgk	tnactagggt	taaattctgc	360
aagagtcac	tgtctgcaaa	agttgcgtta	gtatatctgc	ca		402

<210> 192

<211> 601

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(601)

<223> n = A,T,C or G

<400> 192

gagctcggat	ccaataatct	ttgtctgagg	gcagcacaca	tatncagtgc	catggnaact	60
ggtctacccc	acatgggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcytyttt	gaytaccgtg	tgccaagtgc	tggtgattct	yaacacacyt	ccatcccgt	180
cttttgtgga	aaaactggca	cttktctgga	actagcarga	catcacttac	aaattcaccc	240
acgagacact	tgaaaggtgt	aacaaagcga	ytcttgcat	gctttttgtc	cctccggcac	300
cagttgtcaa	tactaaccg	ctggtttgcc	tccatcacat	ttgtgatctg	tagctctgga	360
tacatctcct	gacagtactg	aagaacttct	tcttttgttt	caaaagcacc	tcttgggtgcc	420
tgttggatca	ggttcccat	tcccagtcyg	aatgttcaca	tggcatattt	wacttcccac	480
aaaacattgc	gatttgaggc	tcagcaacag	caaatcctgt	tccggcattg	gctgcaagag	540
cctcgatgta	gccggccagc	gccaaaggcag	gcgcgcgtgag	ccccaccagc	agcagaagca	600
g						601

<210> 193

<211> 608

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(608)

<223> n = A,T,C or G

<400> 193

atacagccca	natcccacca	cgaagatgcg	cttgttgact	gagaacctga	tgcggtcact	60
ggtcccgtg	tagccccagc	gactctccac	ctgctggaag	cggttgatgc	tgcactcytt	120
cccaacgcag	gcagmagcgg	gscgggtcaa	tgaactccay	tcgtggcttg	gggtkgacgg	180
tkaagtgcag	gaagaggctg	accacctcgc	ggtccaccag	gatgcccag	tgtgcgggac	240
ctgcagcgaa	actcctcgat	ggtcatgagc	gggaagcgaa	tgaggcccag	ggccttgccc	300

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agaaccttcc gectgttctc tggcgctcacc tgcagctgct gccgctgaca ctccggcctcg      360
gaccagcgga caaacggcrt tgaacagccg cacctcacgg atgcccagtg tgcgcgctc      420
caggammgsc accagcgtgt ccagggtcaat gtcgggtgaag ccctccgagg gtrattggcgt      480
ctgcagtgtt tttgtcgatg ttctccaggc acaggctggc cagctgagggt tcatcgaaga      540
gtcgcgcctg cgtgagcagc atgaaggcgt tgcgggctcg cagttcttct tcaggaactc      600
cacgcaat                                         608

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```

<210> 194
<211> 392
<212> DNA
<213> Homo sapien

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```

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

```

```

<400> 194
gaacggctgg accttgccct gcatttgtgt tgcctggcagg gaataccttg gcaagcagyt      60
ccagtcaggag cagccccaga ccgctgccgc ccgaagctaa gcctgcctct ggccttcccc      120
tccgcctcaa tgcagaacca gtagtgggag cactgtgttt agagttaaga gtgaacactg      180
tttgatttta cttgggaatt tcctctgtta tatagctttt cccaatgcta atttccaaac      240
aacaacaaca aaataacatg tttgcctgtt aagttgtata aaagtaggtg attctgtatt      300
taaagaaaat attactgtta catatactgc ttgcaatttc tgtatttatt gktnctstgg      360
aaataaatat agttattaaa ggttgtcant cc                                         392

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```

<210> 195
<211> 502
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(502)
<223> n = A,T,C or G

```

```

<400> 195
ccsttkgagg ggtkaggkyc cagttyccga gtggaagaaa caggccagga gaagtgcgtg      60
ccgagctgag gcagatgttc ccacagtgc cccagagacc stgggstata gtytctgacc      120
cctcncaagg aaagaccacs ttctggggac atgggctgga gggcaggacc tagaggcacc      180
aaggggaagg cccattccgg ggstgttccc cgaggaggaa ggggaaggggc tctgtgtgcc      240
ccccasgagg aagaggccct gagtccctgg atcagacacc ctttcacgtg tatccccaca      300
caaatgcaag ctcaccaagg tcccctctca gtccccttcc stacaccctg amcggccact      360
gscscacacc caccagagc acgccacccg ccatggggar tgtgctcaag gartcgcnng      420
gcarcgtgga catctngtcc cagaaggggg cagaatctcc aatagangga ctgarcmstt      480
gctnanaaaa aaaaanaaaa aa                                         502

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<210> 196
<211> 665
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(665)

```

<223> n = A,T,C or G

<400> 196

ggttacttgg	tttcattgcc	accacttagt	ggatgtcatt	tagaaccatt	ttgtctgctc	60
cctctggaag	ccttgccgag	agcggacttt	gtaattgttg	gagaataact	gctgaatttt	120
wagctgtttk	gagttgatts	gcaccactgc	accacaact	tcaatatgaa	aacyawttga	180
actwatttat	tatcttgtga	aaagtataac	aatgaaaatt	ttgttcatac	tgtattkatc	240
aagtatgatg	aaaagcaawa	gatatatatt	cttttattat	gttaaattat	gattgccatt	300
attaatcggc	aaaatgtgga	gtgtatgttc	ttttcacagt	aatatatgcc	ttttgtaact	360
tcacttggtt	attttattgt	aaatgartta	caaaattctt	aatttaagar	aatgggtatgt	420
watattttat	tcattaattt	ctttcctkgt	ttacgtwaat	tttgaaaaga	wtgcatgatt	480
tcttgacaga	aatcgatctt	gatgctgtgg	aagtagtttg	accacatcc	ctatgagttt	540
ttcttagaat	gtataaaggt	tgtagcccat	cnaacttcaa	agaaaaaat	gaccacatac	600
tttgcaatca	ggctgaaatg	tggcatgctn	ttctaattcc	aactttataa	actagcaaan	660
aagtg						665

<210> 197

<211> 492

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(492)

<223> n = A,T,C or G

<400> 197

ttttnttttt	ttttttttgc	aggaaggatt	ccattttattg	tggatgcatt	ttcacaatat	60
atgtttattg	gagcgatcca	ttatcagtga	aaagtatcaa	gtgtttataa	natttttagg	120
aaggcagatt	cacagaacat	gctngtcngc	ttgcagtttt	acctcgtana	gatnacagag	180
aattatagtc	naaccagtaa	acnaggaatt	tacttttcaa	aagattaaat	ccaaactgaa	240
caaaatttcta	ccctgaaact	tactccatcc	aaatattgga	ataanagtca	gcagtgtac	300
attctcttct	gaactttaga	ttttctagaa	aaatatgtaa	tagtgatcag	gaagagctct	360
tgttcaaaaag	tacaacnaag	caatgttccc	ttaccatagg	ccttaattca	aactttgatc	420
catttcactc	ccatcacggg	agtcaatgct	acctgggaca	cttgtatttt	gttcatnctg	480
ancntggctt	aa					492

<210> 198

<211> 478

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(478)

<223> n = A,T,C or G

<400> 198

tttnttttgn	atttcantct	gtannaanta	ttttcattat	gtttattana	aaaatatnaa	60
tgtntccacn	acaaatcatn	ttacntnagt	aagaggccan	ctacattgta	caacatacac	120
tgagtatatt	ttgaaaagga	caagttttaa	gtanacncat	attgccganc	atancacatt	180
tatacatggc	ttgattgata	tttagcacag	canaaactga	gtgagttacc	agaaanaaat	240
nataatgtgc	aatcngattt	aagatacaaa	acagatccta	tggtacatan	catcntgtag	300
gagttgtggc	tttatgttta	ctgaaagtca	atgcagttcc	tgtacaaaga	gatggccgta	360
agcattctag	tacctctact	ccatgggttaa	gaatcgtaca	cttatgttta	catatgtnc	420

gggtaagaat tgtgttaagt naanttatgg agaggtccan gagaaaaatt tgatncaa 478

<210> 199

<211> 482

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(482)

<223> n = A,T,C or G

<400> 199

agtgacttgt	cctccaacaa	aacccttga	tcaagtttgt	ggcactgaca	atcagaccta	60
tgctagtcc	tgctatctat	tcgtactaa	atgcagactg	gaggggacca	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaatctatt	cctacttgta	cggactttga	180
agtgattcag	tttctctac	ggatgagaga	ctggctcaag	aatatcctca	tcagacttta	240
tgaagccnac	tctgaacacg	ctggttatct	nagatgagaa	ncagagaaat	aaagtcnaga	300
aaatttacct	ggangaaaag	aggctttngg	ctggggacca	tcccattgaa	ccttctctta	360
anggacttta	agaanaaaact	accacatgtn	tgtngtatcc	tggtgccngg	ccgtttantg	420
aacntngacn	ncacccttnt	ggaatanant	cttgacngcn	tcctgaactt	gtcctctctg	480
ga						482

<210> 200

<211> 270

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(270)

<223> n = A,T,C or G

<400> 200

cggccgcaag	tgcaactcca	gctggggccg	tgccgacgaa	gattctgcca	gcagttggtc	60
cgactgagac	gacggcgccg	gcgacagtcg	caggtgcagc	gcgggcgcct	ggggctctgc	120
aaggctgagc	tgacgccgca	gaggtcgtgt	cacgtcccac	gaccttgacg	ccgtcggggg	180
cagccggaac	agagcccggg	gaangcggga	ggcctcgggg	agccctcggg	gaagggcgcc	240
ccgagagata	cgcaggtgca	gggtggccgcc				270

<210> 201

<211> 419

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(419)

<223> n = A,T,C or G

<400> 201

tttttttttt	ttttggaatc	tactgagagc	acagcaggtc	agcaacaagt	ttattttgca	60
gctagcaagg	taacagggta	gggcatggtt	acatgttcag	gtcaacttcc	tttgtcgtgg	120
ttgattgggt	tgtctttatg	ggggcggggg	ggggtagggg	aaancgaagc	anaantaaca	180
tggagtgggt	gcaccctccc	tgtagaacct	ggttacnaaa	gcttggggca	gttcacctgg	240

tctgtgaccg	tcattttctt	gacatcaatg	ttattagaag	tcaggatata	ttttagagag	300
tccactgtnt	ctggagggag	attagggttt	cttgccaana	tccaancaa	atccacntga	360
aaaagttgga	tgatncangt	acngaatacc	ganggcatan	ttctcatant	cggtggcca	419

<210> 202

<211> 509

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(509)

<223> n = A,T,C or G

<400> 202

tttntttttt	ttttttttt	ttttttttt	ttttttttt	ttttttttt	ttttttttt	60
tggcacttaa	tccattttta	tttcaaaatg	tctacaaant	ttnaatncnc	cattatacng	120
gtnattttnc	aaaatctaaa	nnttattcaa	atntnagcca	aantccttac	ncaaattnaa	180
tacnncnaaa	aatcaaaaaat	atacntntct	ttcagcaaac	ttngttacat	aaattaaaaa	240
aatatatacg	gctggtgttt	tcaaagtaca	attatcttaa	cactgcaaac	atnttttnaa	300
ggaactaaaa	taaaaaaaaa	cactnccgca	aagggttaaag	ggaacaacaa	attcntttta	360
caacancnnc	nattataaaa	atcataatctc	aaatcttagg	ggaatatata	cttcacacng	420
ggaatcttaac	ttttactnca	ctttgtttat	ttttttanaa	ccattgtntt	gggccaacaa	480
caatggnaat	nccnccnnc	tggaactagt				509

<210> 203

<211> 583

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(583)

<223> n = A,T,C or G

<400> 203

ttttttttt	tttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttattttact	60
tacacataatt	tattttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataattc	ttaggaatta	gcttaaaatc	tgccataaagt	180
gaaaatcttc	tctagctctt	ttgactgtaa	atttttgact	cttgtaaaac	atccaaattc	240
atttttcttg	tctttaaaat	tatctaattc	ttccattttt	tccctattcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggctt	ttttcctaaa	360
agggaaaaca	ggaagagana	atggcacaca	aaacaaacat	tttatattca	tatttctacc	420
tacgttaata	aaatagcatt	ttgtgaagcc	agctcaaaag	aaggcttaga	tccttttatg	480
tccatttttag	tcactaaacg	atatacnaag	tgccagaatg	caaaagggtt	gtgaacattt	540
attcaaaagc	taatataaga	tatttcacat	actcatcttt	ctg		583

<210> 204

<211> 589

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(589)

<223> n = A,T,C or G

<400> 204

ttttttttnt	tttttttttt	tttttttnctc	ttcttttttt	ttganaatga	ggatcgagtt	60
tttcactctc	tagatagggc	atgaagaaaa	ctcatctttc	cagcttttaa	ataacaatca	120
aatctcttat	gctatatcat	attttaagtt	aaactaatga	gtcactggct	tatcttctcc	180
tgaaggaaat	ctgttcattc	ttctcattca	tatagttata	tcaagtacta	ccttgcatat	240
tgagaggttt	ttcttctcta	tttacacata	tatttccatg	tgaatttgta	tcaaaccctt	300
attttcatgc	aaactagaaa	ataatgtntt	cttttgcata	agagaagaga	acaatatnag	360
cattacaaaa	ctgctcaaat	tgtttggtta	gnttatccat	tataattagt	tnggcaggag	420
ctaatacaaa	tcacattttac	ngacnagcaa	taataaaaact	gaagtaccag	ttaaatatcc	480
aaaataatta	aaggaacatt	tttagcctgg	gtataattag	ctaattcact	ttacaagcat	540
ttattnagaa	tgaattcaca	tgttattatt	cntagccca	acacaatgg		589

<210> 205

<211> 545

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (545)

<223> n = A,T,C or G

<400> 205

tttttntttt	ttttttcagt	aataatcaga	acaatattta	tttttatatt	taaaattcat	60
agaaaagtgc	cttacattta	ataaaaagttt	gtttctcaaa	gtgatcagag	gaattagata	120
tngtcttgaa	caccaatatt	aatttgagga	aaatacacca	aaatacatta	agtaaattat	180
ttaagatcat	agagcttgya	agtgaaaaga	taaaatttga	cctcagaaac	tctgagcatt	240
aaaaatccac	tattagcaaa	taaattacta	tggacttctt	gctttaattt	tgtgatgaat	300
atgggggtgc	actggtaaac	caacacattc	tgaaggatac	attacttagt	gatagattct	360
tatgtacttt	gctanatnac	gtggatatga	gttgacaagt	ttctctttct	tcaatctttt	420
aaggggcnag	ngaaatgagg	aagaaaagaa	aaggattacg	catactgttc	tttctatngg	480
aaggattaga	tatgtttcct	ttgccaatat	taaaaaaata	ataatgttta	ctactagtga	540
aacc						545

<210> 206

<211> 487

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (487)

<223> n = A,T,C or G

<400> 206

tttttttttt	tttttttagtc	aagtttctna	tttttattat	aattaaagtc	ttgggtcattt	60
catttattag	ctctgcaact	tacatattta	aattaaagaa	acgttnttag	acaactgtna	120
caatttataa	atgtaagggtg	ccattattga	gtanatatat	tcctccaaga	gtggatgtgt	180
cccttctccc	accaactaat	gaancagcaa	cattagttta	attttattag	tagatnatac	240
actgctgcaa	acgctaattc	tcttctccat	ccccatgtng	atattgtgta	tatgtgtgag	300
ttggtnagaa	tgcatcanca	atctnacaat	caacagcaag	atgaagctag	gcntgggctt	360
tcggtgaaaa	tagactgtgt	ctgtctgaat	caaatgatct	gacctatcct	cggtggcaag	420
aactcttcga	accgcttcct	caaaggcngc	tgccacattt	gtggcntctn	ttgcacttgt	480

ttcaaaa

487

<210> 207
 <211> 332
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(332)
 <223> n = A,T,C or G

<400> 207
 tgaattggct aaaagactgc atttttanaa ctagcaactc ttatttcttt cctttaaaaa 60
 tacatagcat taaatcccaa atcctattta aagacctgac agcttgagaa ggtcactact 120
 gcatttatag gaccttctgg tggttctgct gttacntttg aantctgaca atccttgana 180
 atctttgcat gcagaggagg taaaagggtat tggattttca cagaggaana acacagcgca 240
 gaaatgaagg ggccaggctt actgagcttg tccactggag ggctcatggg tgggacatgg 300
 aaaagaaggc agcctaggcc ctggggagcc ca 332

<210> 208
 <211> 524
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(524)
 <223> n = A,T,C or G

<400> 208
 agggcggtgg gcgaggggcg ttactgtttt gtctcagtaa caataaatac aaaaagactg 60
 gttgtgttcc ggcccatcc aaccacgaag ttgatttctc ttgtgtgcag agtgactgat 120
 tttaaaggac atggagcttg tcacaatgtc acaatgtcac agtggtgaagg gcacactcac 180
 tcccgcgtga ttcacattta gcaaccaaca atagctcatg agtccatact tgtaaatact 240
 tttggcagaa tacttnttga aacttgcaga tgataactaa gatccaagat atttcccaaa 300
 gttaaatagaa gtgggtcata atattaatta cctgttcaca tcagcttcca tttacaagtc 360
 atgagcccag acactgacat caaactaagc ccacttagac tctcaccac cagtctgtcc 420
 tgtcatcaga caggaggctg tcaccttgac caaattctca ccagtcaatc atctatccaa 480
 aaaccattac ctgatccact tccggtaatg caccaccttg gtga 524

<210> 209
 <211> 159
 <212> DNA
 <213> Homo sapien

<400> 209
 ggggtgaggaa atccagagtt gccatggaga aaattccagt gtcagcattc ttgctccttg 60
 tggccctctc ctacactctg gccagagata ccacagtcaa acctggagcc aaaaaggaca 120
 caaaggactc tcgacccaaa ctgccccaga ccctctcca 159

<210> 210
 <211> 256
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(256)

<223> n = A,T,C or G

<400> 210

actccctggc agacaaaggc agaggagaga gctctgttag ttctgtgttg ttgaactgcc	60
actgaatttc ttccacttg gactattaca tgccanttga gggactaatg gaaaaacgta	120
tggggagatt ttanccaatt tangtntgta aatggggaga ctggggcagg cgggagagat	180
ttgcagggtg naaatgggan ggctggtttg ttanatgaac agggacatag gaggtaggca	240
ccaggatgct aaatca	256

<210> 211

<211> 264

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(264)

<223> n = A,T,C or G

<400> 211

acattgtttt tttagataa agcattgaga gagctctcct taacgtgaca caatggaagg	60
actggaacac ataccacat ctttgttctg agggataatt ttctgataaa gtcttgctgt	120
atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gttaaggaga	180
ggggagatac attcngaaag aggactgaaa gaaatactca agtnggaaaa cagaaaaaga	240
aaaaaaggag caaatgagaa gcct	264

<210> 212

<211> 328

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(328)

<223> n = A,T,C or G

<400> 212

acccaaaaat ccaatgctga atatttggtc tcattattcc canattcttt gattgtcaaa	60
ggatttaatg ttgtctcagc ttgggcactt cagttaggac ctaaggatgc cagccggcag	120
gtttatatat gcagcaacaa tattcaagcg cgacaacagg ttattgaact tgcccgccag	180
ttnaatttca ttcccatgga cttgggatcc ttatcatcag ccagagagat tgaaaattta	240
cccctacnac tctttactct ctgganaggg ccagtgggtg tagctataag cttggccaca	300
tttttttttc cttttattcct ttgtcaga	328

<210> 213

<211> 250

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(250)

<223> n = A,T,C or G

<400> 213

acttatgagc agagcgacat atccnagtgt agactgaata aaactgaatt ctctccagtt	60
taaagcattg ctactgaag ggatagaagt gactgccagg agggaaagta agccaaggct	120
cattatgcca aagganatat acatttcaat tctccaaact tcttcctcat tccaagagtt	180
ttcaatattt gcatgaacct gctgataanc catgttaana aacaaatata tctctnacct	240
tctcatcggt	250

<210> 214

<211> 444

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(444)

<223> n = A,T,C or G

<400> 214

accagaatc caatgctgaa tatttggtt cattattccc agattctttg attgtcaaag	60
gatttaattg tgtctcagct tgggcacttc agttaggacc taaggatgcc agccggcagg	120
tttatatatg cagcaacaat attcaagcgc gacaacagggt tattgaactt gcccgccagt	180
tgaatttcat tcccattgac ttgggatacct tatcatcagc canagagatt gaaaatttac	240
ccctacgact ctttactctc tggagagggc cagtgggtgt agctataagc ttggccacat	300
ttttttttcc tttattcctt tgtcagagat gcgattcatc catatgctan aaaccaacag	360
agtgactttt acaaaattcc tataganatt gtgaataaaa ccttacctat agttgccatt	420
actttgctct ccctaataata cctc	444

<210> 215

<211> 366

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(366)

<223> n = A,T,C or G

<400> 215

acttatgagc agagcgacat atccaagtgt anactgaata aaactgaatt ctctccagtt	60
taaagcattg ctactgaag ggatagaagt gactgccagg agggaaagta agccaaggct	120
cattatgcca aagganatat acatttcaat tctccaaact tcttcctcat tccaagagtt	180
ttcaatattt gcatgaacct gctgataagc catgttgaga aacaaatata tctctgacct	240
tctcatcggt aagcagaggc tgtaggcaac atggaccata gcgaanaaaa aacttagtaa	300
tccaagctgt tttctacact gtaaccagggt ttccaaccaa ggtggaaatc tcctatactt	360
ggtgcc	366

<210> 216

<211> 260

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1) ... (260)
 <223> n = A,T,C or G

<400> 216
 ctgtataaac agaactccac tgcangaggg agggccgggc caggagaatc tccgcttgtc 60
 caagacaggg gcctaaggag ggtctccaca ctgctnntaa gggctnttnc atttttttat 120
 taataaaaag tnnaaaaggc ctcttctcaa cttttttccc ttnggctgga aaatttaaaa 180
 atcaaaaatt tcctnaagtt ntcaagctat catatatact ntatcctgaa aaagcaacat 240
 aattcttctt tccctccttt 260

<210> 217
 <211> 262
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (262)
 <223> n = A,T,C or G

<400> 217
 acctacgtgg gtaagtttan aaatgttata atttcaggaa naggaacgca tataattgta 60
 tcttgcttat aattttctat ttttaataagg aaatagcaaa ttgggggtggg gggaatgtag 120
 ggcatcttac agtttgagca aaatgcaatt aaatgtggaa ggacagcact gaaaaatttt 180
 atgaataatc tgtatgatta tatgtctcta gagtagattt ataattagcc acttacccta 240
 atatccttca tgcttgtaaa gt 262

<210> 218
 <211> 205
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (205)
 <223> n = A,T,C or G

<400> 218
 accaaggtgg tgcattaccg gaantggatc aangacacca tcgtggccaa cccctgagca 60
 cccctatcaa ctcccttttg tagtaaaactt ggaaccttgg aaatgaccag gccaaagactc 120
 aggctcccc agttctactg acctttgtcc ttangtntna ngtccagggt tgctaggaaa 180
 anaaatcagc agacacaggt gtaaa 205

<210> 219
 <211> 114
 <212> DNA
 <213> Homo sapien

<400> 219
 tactgttttg tctcagtaac aataaatata aaaagactgg ttgtgttccg gccccatcca 60
 accacgaagt tgatttctct tgtgtgcaga gtgactgatt ttaaaggaca tgga 114

<210> 220
 <211> 93

<212> DNA

<213> Homo sapien

<400> 220

actagccagc acaaaaaggca gggtagcctg aattgctttc tgctctttac atttctttta 60
 aaataagcat ttagtgctca gtccctactg agt 93

<210> 221

<211> 167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(167)

<223> n = A,T,C or G

<400> 221

actangtgca ggtgcgcaca aatatttgct gatattccct tcatcttgga ttccatgagg 60
 tcttttgccc agcctgtggc tctactgtag taagtttctg ctgatgagga gccagnatgc 120
 cccccactac ctccctgac gctcccana aatcacccaa cctctgt 167

<210> 222

<211> 351

<212> DNA

<213> Homo sapien

<400> 222

agggcgtggt gcggagggcg gtactgacct cattagtagg aggatgcatt ctggcacccc 60
 gttcttcacc tgtccccaa tccttaaaag gccatactgc ataaagtcaa caacagataa 120
 atgtttgctg aattaaagga tggatgaaaa aaattaataa tgaatttttg cataatccaa 180
 tttctcttt tatatttcta gaagaagttt ctttgagcct attagatccc gggaatcttt 240
 taggtgagca tgattagaga gctttaggt tgcttttaca tatactggc atatttgagt 300
 ctcgtatcaa aacaatagat tggtaaagggt ggtattattg tattgataag t 351

<210> 223

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(383)

<223> n = A,T,C or G

<400> 223

aaaacaaaca acaaaaaaaa acaattcttc attcagaaaa attatcttag ggactgatat 60
 tggtaattat ggtcaattta atwrttrtkk ggggcatttc cttacattgt cttgacaaga 120
 taaaaatgtc tgtgccaaaa ttttgatatt tatttgagga cttcttatca aaagtaatgc 180
 tgccaaagga agtctaagga attagtagtg ttcccmtcac ttgtttggag tgtgtattc 240
 taaaagattt tgatttcctg gaatgacaat tatattttaa ctttggtggg ggaaanagtt 300
 ataggaccac agtcttcact tctgatactt gtaaattaat cttttattgc acttgttttg 360
 accattaagc tatatgttta aaa 383

<210> 224

<211> 320
 <212> DNA
 <213> Homo sapien

<400> 224
 cccctgaagg cttcttggtta gaaaatagta cagttacaac caataggaac aacaaaaaga 60
 aaaagtttgt gacattgttag tagggagtgt gtacccttca cccccatca aaaaaaaaaat 120
 ggatacatgg ttaaaggata raagggaat attttatcat atgttctaaa agagaaggaa 180
 gagaaaatac tactttctcr aaatggaagc ccttaaagggt gctttgatac tgaaggacac 240
 aaatgtggcc gtccatctc ctttaragtt gcatgacttg gacacggtaa ctgttgagc 300
 tttaractcm gcattgtgac 320

<210> 225
 <211> 1214
 <212> DNA
 <213> Homo sapien

<400> 225
 gaggactgca gcccgcactc gcagccctgg caggcggcac tggatcatgga aaacgaattg 60
 ttctgctcgg gcgtcctggt gcatccgcag tgggtgctgt cagccgcaca ctgtttccag 120
 aactcctaca ccatcgggct gggcctgcac agtcttgagg ccgaccaaga gccagggagc 180
 cagatgggtgg aggccagcct ctccgtacgg caccagagt acaacagacc cttgctcgct 240
 aacgacctca tgctcatcaa gttggacgaa tccgtgtccg agtctgacac catccggagc 300
 atcagcattg cttcgcagtg ccctaccgag ggaactctt gcctcgtttc tggctgggggt 360
 ctgctggcga acggcagaat gcctaccgtg ctgcagtgcg tgaacgtgtc ggtggtgtct 420
 gaggaggtct gcagtaagct ctatgaccgc ctgtaccacc ccagcatgtt ctgcgccggc 480
 ggaggggcaag accagaagga ctctgcaac ggtgactctg gggggccct gatctgcaac 540
 ggggtacttg agggccttgt gtctttcgga aaagccccgt gtggccaagt tggcgtgcca 600
 ggtgtctaca ccaacctctg caaattcact gagtggatag agaaaaccgt ccaggccagt 660
 taactctggg gactgggaac ccatgaaatt gacccccaaa tacatcctgc ggaagggaatt 720
 caggaatatc tgttcccagc ccctcctccc tcaggcccag gagtccaggc cccagagccc 780
 tctcctcctca aaccaagggt acagatcccc agccccctc cctcagacc caggagtcca 840
 gacccccag cccctcctcc ctccagacca ggagtccagc cctcctccc tcagaccag 900
 gagtccagac ccccagccc ctccctccc agaccagggt gtccaggccc ccaaccctc 960
 ctccctcaga ctccagaggt caagccccca accctcctt cccagagccc agagggtccag 1020
 gtcccagccc ctccctccc agacccagcg gtccaatgcc acctagactc tccctgtaca 1080
 cagtgcccc ttgtggcacg ttgacccaac cttaccagtt ggtttttcat tttttgtccc 1140
 tttccctag atccagaaat aaagtctaag agaagcgcaa aaaaaaaaaa aaaaaaaaaa 1200
 aaaaaaaaaa aaaa 1214

<210> 226
 <211> 119
 <212> DNA
 <213> Homo sapien

<400> 226
 acccagtatg tgcagggaga cggaacccca tgtgacagcc cactccacca gggttcccaa 60
 agaacctggc ccagtcataa tcattcatcc tgacagtggc aataatcacg ataaccagt 119

<210> 227
 <211> 818
 <212> DNA
 <213> Homo sapien

<400> 227

acaattcata	gggacgacca	atgaggacag	ggaatgaacc	cggctctccc	ccagccctga	60
tttttgctac	atatggggtc	ccttttcatt	ctttgcaaaa	acactgggtt	ttctgagaac	120
acggacggtt	cttagcacia	tttgtgaaat	ctgtgtaraa	ccgggctttg	caggggagat	180
aattttcctc	ctctggagga	aaggtgggtg	ttgacaggca	gggagacagt	gacaaggcta	240
gagaaagcca	cgctcggcct	tctctgaacc	aggatggaac	ggcagacccc	tgaaaacgaa	300
gcttggtccc	ttccaatcag	ccacttctga	gaacccccat	ctaacttctt	actggaaaag	360
agggcctcct	caggagcagt	ccaagagttt	tcaaagataa	cgtgacaact	accatctaga	420
ggaaaggggtg	caccctcagc	agagaagccg	agagcttaac	tctggtcgtt	tccagagaca	480
acctgctggc	tgtcttggga	tgcgcccagc	ctttgagagg	ccactacccc	atgaacttct	540
gccatccact	ggacatgaag	ctgaggacac	tgggcttcaa	cactgagttg	tcatgagagg	600
gacaggctct	gccctcaagc	cggctgaggg	cagcaaccac	tctcctcccc	tttctcacgc	660
aaagccattc	ccacaaatcc	agaccatacc	atgaagcaac	gagacccaaa	cagtttggct	720
caagaggata	tgaggactgt	ctcagcctgg	ctttgggctg	acaccatgca	cacacacaag	780
gtccacttct	aggttttcag	cctagatggg	agtcgtgt			818

<210> 228

<211> 744

<212> DNA

<213> Homo sapien

<400> 228

actggagaca	ctgttgaact	tgatcaagac	ccagaccacc	ccaggtctcc	ttcgtgggat	60
gtcatgacgt	ttgacatacc	tttggaaacg	gcctcctcct	tggaaagatg	aagaccgtgt	120
tcgtggccga	cctggcctct	cctggcctgt	ttcttaagat	gcggagtcac	atttcaatgg	180
taggaaaagt	ggcttcgtaa	aatagaagag	cagtcactgt	ggaactacca	aatggcgaga	240
tgctcgggtc	acattggggg	gctttgggat	aaaagattta	tgagccaact	attctctggc	300
accagattct	aggccagttt	gttccactga	agcttttccc	acagcagtcc	acctctgcag	360
gctggcagct	gaatggcttg	ccggtggctc	tgtggcaaga	tcacactgag	atcgatgggt	420
gagaaggcta	ggatgcttgt	ctagtgttct	tagctgtcac	gttggctcct	tccaggttgg	480
ccagacgggtg	ttggccactc	ccttctaaaa	cacaggcgcc	ctcctgggtg	cagtgaacccg	540
ccgtggatatg	ccttggccca	ttccagcagt	cccagttatg	catttcaagt	ttgggggttg	600
ttcttttcgt	taatgttctt	ctgtgttgtc	agctgtcttc	atttcctggg	ctaagcagca	660
ttgggagatg	tggaccagag	atccactcct	taagaaccag	tggcgaaaga	cactttcttt	720
cttcaactctg	aagtagctgg	tggt				744

<210> 229

<211> 300

<212> DNA

<213> Homo sapien

<400> 229

cgagtctggg	ttttgtctat	aaagtttgat	ccctcctttt	ctcatccaaa	tcagtgaac	60
cattacacat	cgaaataaaa	gaaagggtgg	agacttgccc	aacgccaggc	tgacatgtgc	120
tgcagggttg	ttgtttttta	attattattg	ttagaaacgt	caccacagct	ccctgttaat	180
ttgtatgtga	cagccaactc	tgagaagggtc	ctatttttcc	acctgcagag	gatccagctc	240
cactaggctc	ctccttgccc	tcacactgga	gtctccgcca	gtgtgggtgc	ccactgacat	300

<210> 230

<211> 301

<212> DNA

<213> Homo sapien

<400> 230

cagcagaaca	aatacaata	tgaagagtgc	aaagatctca	taaaatctat	gctgaggaat	60
gagcgacagt	tcaaggagga	gaagcttgca	gagcagctca	agcaagctga	ggagctcagg	120

caatataaag	tcttggttca	cactcaggaa	cgagagctga	cccagttaag	ggagaagttg	180
cggaagggga	gagatgcctc	cctctcattg	aatgagcatc	tccaggccct	cctcactccg	240
gatgaaccgg	acaagtccca	ggggcaggac	ctccaagaaa	cagacctcgg	ccgcgaccac	300
g						301

<210> 231

<211> 301

<212> DNA

<213> Homo sapien

<400> 231

gcaagcacgc	tggcaaatct	ctgtcaggtc	agctccagag	aagccattag	tcatttttagc	60
caggaactcc	aagtccacat	ccttggcaac	tggggacttg	cgcagggttag	ccttgaggat	120
ggcaacacgg	gactttctcat	caggaagtgg	gatgtagatg	agctgatcaa	gacggccagg	180
tctgaggatg	gcaggatcaa	tgatgtcagg	ccggttggta	ccgccaatga	tgaacacatt	240
tttttttg	gacatgccat	ccattttctgt	caggatctgg	ttgatgactc	ggtcagcagc	300
c						301

<210> 232

<211> 301

<212> DNA

<213> Homo sapien

<400> 232

agtaggtatt	tcgtgagaag	ttcaacacca	aaactggaac	atagttctcc	ttcaagtgtt	60
ggcgacagcg	gggcttctctg	attctggaat	ataactttgt	gtaaattaac	agccacctat	120
agaagagtcc	atctgctgtg	aaggagagac	agagaactct	gggttccgtc	gtcctgtcca	180
cgtgctgtac	caagtgtctg	tgccagcctg	ttacctgttc	tactgaaaa	tctggctaatt	240
gctcttgtgt	atcacttctg	attctgacaa	tcaatcaatc	aatggcctag	agcactgact	300
g						301

<210> 233

<211> 301

<212> DNA

<213> Homo sapien

<400> 233

atgactgact	tcccagtaag	gctctctaag	gggtaagtag	gaggatccac	aggatttgag	60
atgctaaggc	cccagagatc	gtttgatcca	accctcttat	tttcagaggg	gaaaatgggg	120
cctagaagtt	acagagcatc	tagctgggtg	gctggcaccc	ctggcctcac	acagactccc	180
gagtagctgg	gactacaggc	acacagtcac	tgaagcaggc	cctgttagca	attctatgcg	240
tacaaattaa	catgagatga	gtagagactt	tattgagaaa	gcaagagaaa	atcctatcaa	300
c						301

<210> 234

<211> 301

<212> DNA

<213> Homo sapien

<400> 234

aggctctaca	catcgagact	catccatgat	tgatatgaat	ttaaaaatta	caagcaaaga	60
cattttattc	atcatgatgc	tttcttttgt	ttcttctttt	cgttttcttc	tttttctttt	120
tcaatttcag	caacatactt	ctcaaattct	tcaggattta	aaatcttgag	ggattgatct	180
cgcctcatga	cagcaagttc	aatgtttttg	ccacctgact	gaaccacttc	caggagtgcc	240
ttgatcacca	gcttaatgg	cagatcatct	gcttcaatgg	cttcgtcagt	atagttcttc	300

t

301

<210> 235
 <211> 283
 <212> DNA
 <213> Homo sapien

<400> 235

tggggctgtg catcaggcgg gtttgagaaa tattcaattc tcagcagaag ccagaatttg	60
aattccctca tcttttaggg aatcatttac caggtttggg gaggattcag acagctcagg	120
tgctttcact aatgtctctg aacttctgtc cctctttgtt catggatagt ccaataaata	180
atgttatctt tgaactgatg ctcataggag agaataaag aactctgagt gatatcaaca	240
ttagggattc aaagaaatat tagatttaag ctcacactgg tca	283

<210> 236
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 236

aggctcctcca ccaactgcct gaagcacggt taaaattggg aagaagtata gtgcagcata	60
aatactttta aatcgatcag atttccctaa cccacatgca atcttcttca ccagaagagg	120
tcggagcagc atcattaata ccaagcagaa tgcgtaatag ataaatacaa tgggtatatag	180
tgggtagacg gcttcatgag tacagtgtac tgtgggtatcg taatctggac ttgggttgta	240
aagcatcgtg taccagtcag aaagcatcaa tactcgacat gaacgaatat aaagaacacc	300
a	301

<210> 237
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 237

cagtggtagt ggtgggtggac gtggcggttg tcgtgggtgcc ttttttggtg cccgtcacaa	60
actcaatttt tgttcgctcc tttttggcct ttccaattt gtccatctca attttctggg	120
ccttggctaa tgcctcatag taggagtcct cagaccagcc atggggatca aacatctct	180
ttgggtagtt ggtgccaagc tcgtcaatgg cacagaatgg atcagcttct cgtaaactta	240
gggttccgaa attctttctt cctttggata atgtagttca tatccattcc ctcttttct	300
t	301

<210> 238
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 238

gggcagggtt tttttttttt ttttttgatg gtgcagaccc ttgctttatt tgtctgactt	60
gttcacagtt cagccccctg ctcaaaaaac caacggggcca gctaaggaga ggaggaggca	120
ccttgagact tccggagtcg aggcctctcca gggttcccca gcccatcaat cattttctgc	180
acccccctgc tgggaagcag ctccctgggg ggtgggaatg ggtgactaga agggatttca	240
gtgtgggacc cagggtctgt tcttcacagt aggaggtgga agggatgact aatttcttta	300
t	301

<210> 239
 <211> 239

<212> DNA

<213> Homo sapien

<400> 239

ataagcagct aggggaattct ttatttagta atgtcctaac ataaaagttc acataactgc	60
ttctgtcaaa ccatgatact gagctttgtg acaaccaga aataactaag agaaggcaaa	120
cataatacct tagagatcaa gaaacattta cacagttcaa ctgtttaaaa atagctcaac	180
attcagccag tgagtagagt gtgaatgcca gcatacacag tatacaggtc cttcagggg	239

<210> 240

<211> 300

<212> DNA

<213> Homo sapien

<400> 240

ggtcctaatag aagcagcagc ttccacattt taacgcaggt ttacggtgat actgtccttt	60
gggatctgcc ctccagtggg acccttttaag gaagaagtgg gcccaagcta agttccacat	120
gctgggtgag ccagatgact tctgttcctt ggtcactttc ttcaatgggg cgaatggggg	180
ctgccaggtt tttaaaatca tgcttcattt tgaagcacac ggtcacttca cctcctcac	240
gctgtgggtg tactttgatg aaaataccca ctttgttggc ctttctgaag ctataatgtc	300

<210> 241

<211> 301

<212> DNA

<213> Homo sapien

<400> 241

gaggtctggt gctgaggtct ctgggctagg aagaggagtt ctgtggagct ggaagccaga	60
cctcttttggg ggaaactcca gcagctatgt tgggtgtctct gaggggaatgc aacaaggctg	120
ctcctccatg tattggaaaa ctgcaaactg gactcaactg gaaggaagtg ctgctgccag	180
tgtgaagaac cagcctgagg tgacagaaac ggaagcaaac aggaacagcc agtcttttct	240
tctcctcct gtcatacggg ctctctcaag catcctttgt tgtcaggggc ctaaaaggga	300
g	301

<210> 242

<211> 301

<212> DNA

<213> Homo sapien

<400> 242

ccgaggtcct gggatgcaac caatcactct gtttcacgtg acttttatca ccatacaatt	60
tgtggcattt cctcattttc tacattgtag aatcaagagt gtaataaat gtatatcgat	120
gtcttcaaga atatatcatt cctttttcac tagaaccat tcaaatata agtcaagaat	180
cttaatatca acaaatatat caagcaaact ggaaggcaga ataactacca taatttagta	240
taagtacca aagttttata aatcaaaagc cctaatagata accattttta gaattcaatc	300
a	301

<210> 243

<211> 301

<212> DNA

<213> Homo sapien

<400> 243

aggtaagtcc cagtttgaag ctcaaaagat ctggtatgag cataggctca tcgacgacat	60
ggtaggcccga gctatgaaat cagagggagg cttcatctgg gcctgtaaaa actatgatgg	120

tgacgtgcag tcggactctg tggcccaagg gtatggctct ctccggcatga tgaccagcgt 180
 gctgggttgt ccagatggca agacagtaga agcagaggct gccacggga ctgtaacccg 240
 tcactaccgc atgttccaga aaggacagga gacgtccacc aatcccattg ctccatttt 300
 t 301

<210> 244
 <211> 300
 <212> DNA
 <213> Homo sapien

<400> 244
 gctgggttgc aagaatgaaa tgaatgattc tacagctagg acttaacctt gaaatggaaa 60
 gtcattgcaat cccatttgca ggatctgtct gtgcacatgc ctctgtagag agcagcattc 120
 ccagggacct tggaaacagt tgacactgta aggtgcttgc tccccaagac acatcctaaa 180
 aggtgttgta atggtgaaaa cgtcttcctt ctttattgcc ccttcttatt tatgtgaaca 240
 actggttgtc ttttgtgtat cttttttaa ctgtaaagtt caattgtgaa aatgaatatt 300

<210> 245
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 245
 gtctgagtat ttaaaatggt attgaaatta tccccaacca atgttagaaa agaaagaggt 60
 tatatactta gataaaaaat gaggtgaatt actatccatt gaaatcatgc tcttagaatt 120
 aaggccagga gatattgtca ttaatgtara cttcaggaca ctagagtata gcagccctat 180
 gttttcaaag agcagagatg caattaaata ttgttttagca tcaaaaaggc cactcaatac 240
 agctaataaa atgaaagacc taatttctaa agcaattctt tataatttac aaagttttaa 300
 g 301

<210> 246
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 246
 ggtctgtcct acaatgcctg cttcttgaaa gaagtcggca ctttctagaa tagctaaata 60
 acctgggctt attttaaaga actatttgta gctcagattg gttttcctat ggctaaaata 120
 agtgcttctt gtgaaaatta aataaaacag ttaattcaaa gccttgatat atgttaccac 180
 taacaatcat actaaatata ttttgaagta caaagtttga catgctctaa agtgacaacc 240
 caaatgtgtc ttacaaaaca cgttcctaac aaggtatgct ttacactacc aatgcagaaa 300
 c 301

<210> 247
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 247
 aggtcctttg gcagggtcga tggatcagag ctcaaactgg agggaaaggc atttcgggta 60
 gcctaagagg gcgactggcg gcagcacaac caaggaaggc aagggtgttt cccccacgct 120
 gtgtcctgtg ttcaggtgcg acacacaatc ctcatgggaa caggatcacc catgcgctgc 180
 ccttgatgat caaggttggg gcttaagtgg attaaggagg gcaagttctg gggtccttgc 240
 cttttcaaac catgaagtca ggctctgtat ccctcctttt cctaactgat attctaacta 300
 a 301

<210> 248
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 248
 aggtccttgg agatgccatt tcagccgaag gactcttctw ttcggaagta caccctcact 60
 attaggaaga ttcttagggg taatttttct gaggaaggag aactagccaa cttaagaatt 120
 acaggaagaa agtgggttgg aagacagcca aagaaataaa agcagattaa attgtatcag 180
 gtacattcca gcctgttggc aactccataa aaacatttca gattttaatc ccgaatttag 240
 ctaatgagac tggatttttg ttttttatgt tgtgtgtcgc agagctaaaa actcagttcc 300
 c 301

<210> 249
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 249
 gtccagagga agcacctggg gctgaactag gcttgccttg ctgtgaactt gcacttggag 60
 ccttgacgct gctgttctcc ccgaaaaacc cgaccgacct ccgcgatctc cgtcccgcgc 120
 ccagggagac acagcagtga ctcagagctg gtcgcacact gtgcctccct cctcacgcgc 180
 catcgtaatg aattattttg aaaattaatt ccaccatcct ttcagattct ggatggaaag 240
 actgaatctt tgactcagaa ttgtttgctg aaaagaatga rgtgactttc ttagtcattt 300
 a 301

<210> 250
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 250
 ggtctgtgac aaggacttgc aggctgtggg aggcaagtga cccttaacac tacacttctc 60
 cttatcttta ttggcttgat aaacataatt atttctaaca ctagcttatt tccagttgcc 120
 cataagcaca tcagtacttt tctctggctg gaatagtaaa ctaaaagtatg gtacatctac 180
 ctaaaagact actatgtgga ataatacata ctaatgaagt attacatgat ttaaagacta 240
 caataaaaacc aaacatgctt ataacattaa gaaaaacaat aaagatacat gattgaaacc 300
 a 301

<210> 251
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 251
 gccgaggtcc tacatttggc ccagtttccc cctgcatcct ctccaggggc cctgcctcat 60
 agacaacctc atagagcata ggagaactgg ttgccctggg ggcaggggga ctgtctggat 120
 ggcaggggtc ctcaaaaatg ccactgtcac tgccaggaaa tgcttctgag cagtacacct 180
 cattggggtc aatgaaaagc ttcaagaaat cttcaggctc actctcttga aggcccgga 240
 cctctggagg ggggcagtgg aatcccagct ccaggacgga tcctgtcgaa aagatatcct 300
 c 301

<210> 252
 <211> 301

<212> DNA

<213> Homo sapien

<400> 252

gcaaccaatc actctgtttc acgtgacttt tatcaccata caatttgtgg catttccctca	60
ttttctacat tgtagaatca agagtgtaaa taaatgtata tcgatgtctt caagaatata	120
tcattccctt ttcactagga acccattcaa aatataagtc aagaatctta atatcaacaa	180
atatatcaag caaactggaa ggcagaataa ctaccataat ttagtataag taccctaaagt	240
tttataaatc aaaagcccta atgataacca tttttagaat tcaatcatca ctgtagaatc	300
a	301

<210> 253

<211> 301

<212> DNA

<213> Homo sapien

<400> 253

ttccctaaga agatgttatt ttgttgggtt ttgttcccc tccatctcga ttctcgtacc	60
caactaaaaa aaaaaataa agaaaaaatg tgctgcgttc tgaaaaataa ctccttagct	120
tggtctgatt gttttcagac cttaaaaat aaacttgttt cacaagcttt aatccatgtg	180
gattttttt cttagagaac cacaaaacat aaaaggagca agtcggactg aatacctgtt	240
tccatagtgc ccacagggtta ttcctcacat tttctccata ggaaaatgct ttttcccaag	300
g	301

<210> 254

<211> 301

<212> DNA

<213> Homo sapien

<400> 254

cgctgcgcct ttcccttggg ggagggggcaa ggccagaggg ggtccaagtg cagcacgagg	60
aacttgacca attcccttga agcgggtggg ttaaaccctg taaatgggaa caaatcccc	120
ccaaatctct tcatcttacc ctggtggact cctgactgta gaattttttg gttgaaacaa	180
gaaaaaaata agcttttggga cttttcaagg ttgcttaaca ggtactgaaa gactggcctc	240
acttaaaactg agccaggaaa agctgcagat ttattaatgg gtgtgttagt gtgcagtgcc	300
t	301

<210> 255

<211> 302

<212> DNA

<213> Homo sapien

<400> 255

agcttttttt tttttttttt tttttttttt ttcattaaaa aatagtgtct tttattataa	60
attactgaaa tgtttctttt ctgaatataa atataaatat gtgcaaagtt tgacttggat	120
tgggattttg ttgagttctt caagcatctc ctaataccct caaggggctg agtagggggg	180
aggaaaaagg actggagggtg gaatctttat aaaaaacaag agtgattgag gcagattgta	240
aacattatta aaaaacaaga aacaaacaaa aaaaatagaga aaaaaccac cccaacacac	300
aa	302

<210> 256

<211> 301

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 256
 gttccagaaa acattgaagg tggtttccca aagtctaact agggataccc cctctagcct 60
 aggaccctcc tccccacacc tcaatccacc aaaccatcca taatgcaccc agataggccc 120
 acccccaaaa gcctggacac cttgagcaca cagttatgac caggacagac tcatctctat 180
 aggcaaataag ctgctggcaa actggcatta cctggtttgt ggggatgggg gggcaagtgt 240
 gtggcctctc ggctgggta gcaagaacat tcagggtagg cctaagttan tcgtgttagt 300
 t 301

<210> 257
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 257
 gttgtggagg aactctggct tgctcattaa gtccactga ttttcactat cccctgaatt 60
 tccccactta tttttgtctt tcactatcgc aggccttaga agaggtctac ctgcctccag 120
 tcttacctag tccagtctac cccctggagt tagaatggcc atcctgaagt gaaaagtaat 180
 gtcacattac tcccttcagt gatttcttgt agaagtgcc atccctgaat gccaccaaga 240
 tcttaattct cacatcttta atcttatctc ttgactcct ctttacaccg gagaaggctc 300
 c 301

<210> 258
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 258
 cagcagtagt agatgccgta tgccagcacg cccagcactc ccaggatcag caccagcacc 60
 agggggcccag ccaccaggcg cagaagcaag ataaacagta ggctcaagac cagagccacc 120
 cccagggcaa caagaatcca ataccaggac tgggcaaaat cttcaaagat cttaacactg 180
 atgtctcggg cattgaggct gtcaataana cgctgatccc ctgctgtatg gtggtgtcat 240
 tgggtgatccc tgggagcgcc ggtggagtaa cgttgggtcca tggaaagcag cgcccacaac 300
 t 301

<210> 259
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 259

```

tcatatatgc aaacaaatgc agactangcc tcaggcagag actaaaggac atctcttggg      60
gtgtcctgaa gtgatttggg cccctgaggg cagacaccta agtaggaatc ccagtgggaa      120
gcaaagccat aaggaagccc aggattcctt gtgatcagga agtggggccag gaaggtctgt      180
tccagctcac atctcatctg catgcagcac ggaccggatg cgcccactgg gtcttgggctt      240
ccctcccatc ttctcaagca gtgtccttgt tgagccattt gcctccttgg ctccaggtgg      300
c                                                                    301

```

```

<210> 260
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 260
tttttttttct ccctaaggaa aaagaaggaa caagtctcat aaaaccaa at aagcaatgg      60
aaggtgtctt aacttgaaaa agattaggag tctctgggtt acaagttata attgaatgaa      120
agaactgtaa cagccacagt tggccatttc atgccaatgg cagcaaacia caggattaac      180
tagggcaaaa taaataagtg tgtggaagcc ctgataagtg cttataaac agactgattc      240
actgagacat cagtacctgc ccgggcggcc gctcgagccg aattctgcag atatccatca      300
c                                                                    301

```

```

<210> 261
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 261
aaatattcga gcaaactcctg taactaatgt gtctccataa aaggctttga actcagtga      60
tctgttcca tccacgattc tagcaatgac ctctcggaca tcaaagctcc tcttaaggtt      120
agcaccaact attccataca attcatcagc aggaaataaa ggctcttcag aaggttcaat      180
ggtgacatcc aattttcttct gataatttag attcctcaca accttcctag ttaagtgaag      240
ggcatgatga tcatccaaag cccagtgggtc acttactcca gactttctgc aatgaagatc      300
a                                                                    301

```

```

<210> 262
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 262
gaggagagcc tggtacagca tttgtaagca cagaatactc caggagtatt tgtaattgtc      60
tgtgagcttc ttgccgcaag tctctcagaa atttaaaaag atgcaaatac ctgagtcacc      120
cctagacttc ctaaaccaga tcctctgggg ctggaacctg gactctgca tttgtaatga      180
gggctttctg gtgcacacct aattttgtgc atctttgccc taaatcctgg attagtggcc      240
catcattacc cccacattat aatgggatag attcagagca gatactctcc agcaaagaat      300
c                                                                    301

```

```

<210> 263
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (301)
<223> n = A,T,C or G

```

<400> 263

tttagcttgt	ggtaaagac	tcacaaaact	gattttaaaa	tcaagttaat	gtgaattttg	60
aaaattacta	cttaaatccta	attcacaata	acaatggcat	taaggtttga	cttgagttgg	120
ttcttagtat	tatttatggg	aaataggctc	ttaccacttg	caaataactg	gccacatcat	180
taatgactga	cttcccagta	aggctctcta	aggggtaagt	angaggatcc	acaggatttg	240
agatgctaag	gccccagaga	tcgtttgatc	caaccctctt	attttcagag	gggaaaatgg	300
g						301

<210> 264

<211> 301

<212> DNA

<213> Homo sapien

<400> 264

aaagacgtta	aaccactcta	ctaccacttg	tggaactctc	aaagggtaaa	tgacaaaacc	60
aatgaatgac	tctaaaaaca	atatttacat	ttaatggttt	gtagacaata	aaaaaacaag	120
gtggatagat	ctagaattgt	aacattttta	gaaaaccata	scatttgaca	gatgagaaag	180
ctcaattata	gatgcaaagt	tataactaaa	ctactatagt	agtaaagaaa	tacatttcac	240
acccttcata	taaattcact	atcttggtct	gaggcactcc	ataaaatgta	tcacgtgcat	300
a						301

<210> 265

<211> 301

<212> DNA

<213> Homo sapien

<400> 265

tgcccaagtt	atgtgtaagt	gtatccgcac	ccagaggtaa	aactacactg	tcattcttgt	60
cttcttgtga	cgcagtattt	cttctctggg	gagaagccgg	gaagtcttct	cctgggtcta	120
catattcttg	gaagtctcta	atcaactttt	gttccatttg	tttcatttct	tcaggaggga	180
ttttcagttt	gtcaacatgt	tctctaacaa	cacttgccca	tttctgtaa	gaatccaaag	240
cagtccaagg	ctttgacatg	tcaacaacca	gcataactag	agtatccttc	agagatacgg	300
c						301

<210> 266

<211> 301

<212> DNA

<213> Homo sapien

<400> 266

taccgtctgc	ccttctctcc	atccaggcca	tctgcgaatc	tacatgggtc	ctcctattcg	60
acaccagatc	actctttcct	ctaccacag	gcttgctatg	agcaagagac	acaacctcct	120
ctcttctgtg	ttccagcttc	ttttcctggt	cttcccaccc	cttaagttct	attcctgggg	180
atagagacac	caatacccat	aacctctctc	ctaagcctcc	ttataaccca	gggtgcacag	240
cacagactcc	tgacaactgg	taaggccaat	gaactgggag	ctcacagctg	gctgtgcctg	300
a						301

<210> 267

<211> 301

<212> DNA

<213> Homo sapien

<400> 267

aaagagcaca	ggccagctca	gcctgccctg	gccatctaga	ctcagcctgg	ctccatgggg	60
------------	------------	------------	------------	------------	------------	----


```

gttctcagtg ctgagtccat ccaggaaaag ctcacctaga ctttctgagg ctgaatcttc      120
atcctcacag gcagcttctg agagcctgat attcctagcc ttgatggtct ggagtaaagc      180
ctcattctga ttctctctct tcttttcttt caagttggct ttcttcacat ccctctgttc      240
aatcgcttc agcttgtctg ctttagccct catttcaga agcttcttct ctttggcatc      300
t                                                                 301

```

```

<210> 268
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 268
aatgtctcac tcaactactt cccagcctac cgtggcctaa ttctgggagt tttcttctta      60
gatcttggga gagctgggtc ttctaaggag aaggaggaag gacagatgta actttggatc      120
tcgaagagga agtctaattg aagtaattag tcaacgggtc ttgtttagac tcttgggaata      180
tgctgggtgg ctgagtgagc ccttttggag aaagcaagta ttattcttaa ggagtaacca      240
cttcccattg ttctactttc taccatcatc aattgtatat tatgtattct ttggagaact      300
a                                                                 301

```

```

<210> 269
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 269
taacaatata cactagctat ctttttaact gtccatcatt agcaccaatg aagattcaat      60
aaaattacct ttattcacac atctcaaaac aattctgcaa attcttagtg aagttaact      120
atagtcacag accttaaata ttcacattgt tttctatgtc tactgaaaat aagttcacta      180
cttttctgga tattctttac aaaatcttat taaaattcct ggtattatca cccccaatta      240
tacagtagca caaccacctt atgtagtttt tacatgatag ctctgtagaa gtttcacatc      300
t                                                                 301

```

```

<210> 270
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 270
cattgaagag cttttgcgaa acatcagaac acaagtgctt ataaaattaa ttaagcctta      60
cacaagaata catattcctt ttatttctaa ggagttaaac atagatgtag ctgatgtgga      120
gagcttgctg gtgcagtgca tattggataa cactattcat ggccgaattg atcaagtcaa      180
ccaactcctt gaactggatc atcagaagaa ggggtggtgca cgatatactg cactagataa      240
tggaccaacc aactaaattc tctcaccagg ctgtatcagt aaactggctt aacagaaaac      300
a                                                                 301

```

```

<210> 271
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

<400> 271

```

aaaagggttct cataagatta acaattttaa taaatatttg atagaacatt ctttctcatt      60
tttatagctc atctttaggg ttgatattca gttcatgctt cccttgctgt tcttgatcca      120
gaattgcaat cacttcatca gcctgtattc gctccaattc tctataaagt ggggtccaagg      180
tgaaccacag agccacagca cacctctttc ccttggtgac tgccttcacc ccatganggt      240
tctctctctc agatganaac tgatcatgcg ccacacattt ggggttttata gaagcagtca      300
c

```

<210> 272

<211> 301

<212> DNA

<213> Homo sapien

<400> 272

```

taaattgcta agccacagat aacaccaatc aaatggaaca aatcactgtc ttcaaattgtc      60
ttatcagaaa accaaatgag cctggaatct tcataatacc taaacatgcc gtatttagga      120
tccaataatt ccctcatgat gagcaagaaa aattctttgc gcacccctcc tgcattccaca      180
gcatctttct caacaaatat aaccttgagt ggcttcttgt aatctatgtt ctttggttttc      240
ctaaggactt ccattgcac tctacaata ttttctctac gcaccactag aattaagcag      300
g

```

<210> 273

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 273

```

acatgtgtgt atgtgtatct ttgggaaaaa aanaagacat cttgtttayt attttttttg      60
agagangctg ggacatggat aatcacwtaa ttgtctayta tyactttaat ctgactygaa      120
gaaccgtcta aaaataaaat ttaccatgtc dtatattcct tatagtatgc ttatttcacc      180
ttytttctgt ccagagagag tatcagtgc ananatttma ggggtgaamac atgmattggt      240
gggacttnty tttacngagm accctgccc ggcgccctcg makcngantt ccgcsananc      300
t

```

<210> 274

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 274

```

cttatatact ctttctcaga ggcaaaagag gagatgggta atgtagacaa ttcttttgagg      60
aacagtaaat gattattaga gagaangaat ggaccaagga gacagaaatt aacttgtaaa      120
tgattctctt tggaatctga atgagatcaa gaggccagct ttagcttggt gaaaagtcca      180
tctaggtatg gttgcattct cgtcttcttt tctgcagtag ataattagggt aaccgaaggc      240
aattgtgctt cttttgataa gaagctttct tggatcatc aggaaattcc aganaaaagtc      300

```

c

301

<210> 275
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 275
tcggtgtcag cagcacgtgg cattgaacat tgcaatgtgg agcccaaacc acagaaaatg 60
gggtgaaatt ggccaacttt ctattaactt atgttggcaa ttttgccacc aacagtaagc 120
tggcccttct aataaaagaa aattgaaagg tttctcacta aacggaatta agtagtggag 180
tcaagagact cccaggcctc agcgtacctg cccgggcggc cgctcgaagc cgaattctgc 240
agatatccat cacactggcg gncgctcgan catgcatcta gaaggnccaa ttcgccctat 300
a 301

<210> 276
<211> 301
<212> DNA
<213> Homo sapien

<400> 276
tgtacacata ctcaataaat aaatgactgc attgtggtat tattactata ctgattatat 60
ttatcatgtg acttctaatt agaaaatgta tccaaaagca aaacagcaga tatacaaaat 120
taaagagaca gaagatagac attaacagat aaggcaactt atacattgag aatccaaatc 180
caatacatatt aaacatttgg gaaatgaggg ggacaaatgg aagccagatc aaatttgtgt 240
aaaactattc agtatgtttc ctttgcttca tgtctgagaa ggctctcctt caatggggat 300
g 301

<210> 277
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 277
tttgttgatg tcagtatttt attacttgcg ttatgagtgc tcacctggga aattcctaaag 60
atacagagga cttggaggaa gcagagcaac tgaatttaat ttaaaagaag gaaaacattg 120
gaatcatggc actcctgata ctttcccaaa tcaacactct caatgccccca cctcgtcctt 180
caccatagtg gggagactaa agtggccacg gatttgcctt angtgtgcag tgcgttctga 240
gttcnctgtc gattacatct gaccagtctc ctttttccga agtcctntccg ttcaatcttg 300
c 301

<210> 278
<211> 301
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 278

taccactaca	ctccagcctg	ggcaacagag	caagacctgt	ctcaaagcat	aaaatggaat	60
aacatatcaa	atgaaacagg	gaaaatgaag	ctgacaattt	atggaagcca	gggcttgcca	120
cagtctctac	tggtattatg	cattacctgg	gaatttatat	aagcccttaa	taataatgcc	180
aatgaacatc	tcattgtgtg	tcacaatgtt	ctggcactat	tataagtgtc	tcacagggtt	240
tatgtgttct	tcgtaacttt	atggantagg	tactcggccg	cgaacacgct	aagccgaatt	300
c						301

<210> 279

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 279

aaagcaggaa	tgacaaagct	tgcttttctg	gtatgttcta	gggtgtattgt	gacttttact	60
gttatattaa	ttgccaatat	aagtaaatat	agattatata	tgtatagtgt	ttcacaaagc	120
ttagaccttt	accttccagc	cacccacag	tgcttgatat	ttcagagtca	gtcattgggt	180
atacatgtgt	agttccaaag	cacataagct	agaanaanaa	atatttctag	ggagcactac	240
catctgtttt	cacatgaaat	gccacacaca	tagaactcca	acatcaattt	cattgcacag	300
a						301

<210> 280

<211> 301

<212> DNA

<213> Homo sapien

<400> 280

ggtagctggag	ttttcctccc	ctgtgaaaac	gtaactactg	ttgggagtga	attgaggatg	60
tagaaagggt	gtggaaccaa	attgtgggtc	atggaaatag	gagaatatgg	ttctcactct	120
tgagaaaaaa	acctaaagatt	agcccaggta	gttgacctga	acttcagttt	ttctgcctgg	180
gtttgatata	gtttagggtt	gggggttagat	taagatctaa	attacatcag	gacaaagaga	240
cagactatta	actccacagt	taattaagga	ggtaggttcc	atgtttattt	gttaaagcag	300
t						301

<210> 281

<211> 301

<212> DNA

<213> Homo sapien

<400> 281

aggtagaaga	aggggaatgg	gaaagagctg	ctgctgtggc	attgttcaac	ttggatatcc	60
gccgagcaat	ccaaatcctg	aatgaagggg	catcttctga	aaaaggagat	ctgaatctca	120
atgtggtagc	aatggcttta	tcgggttata	cggatgagaa	gaactccctt	tggagagaaa	180
tgtgtagcac	actgcgatta	cagctaaata	accggtatct	gtgtgtcatg	tttgcatctc	240

tgacaagtga aacaggatct tacgatggag ttttgtatga aaacaaagtt gcagtacctc 300
g 301

<210> 282
<211> 301
<212> DNA
<213> Homo sapien

<400> 282
caggtactac agaattaaaa tactgacaag caagtagttt cttggcgtgc acgaattgca 60
tccagaaccc aaaaatttaag aaattcaaaa agacattttg tgggcacctg ctagcacaga 120
agcgcagaag caaagcccag gcagaacccat gctaaccctta cagctcagcc tgcacagaag 180
cgcagaagca aagcccaggc agaaccatgc taaccttaca gctcagcctg cacagaagcg 240
cagaagcaaa gcccaggcag aacatgctaa ccttacagct cagcctgcac agaagcacag 300
a 301

<210> 283
<211> 301
<212> DNA
<213> Homo sapien

<400> 283
atctgtatac ggcagacaaa ctttatarag tgtagagagg tgagcgaaag gatgcaaaag 60
cacttttgagg gctttataat aatatgctgc ttgaaaaaaa aaatgtgtag ttgatactca 120
gtgcatctcc agacatagta aggggttgct ctgaccaatc aggtgatcat tttttctatc 180
acttcccagg ttttatgcaa aaattttggt aaattctata atggtgatat gcatctttta 240
ggaaacatat acatttttaa aaatctattt tatgtaagaa ctgacagacg aatttgcttt 300
g 301

<210> 284
<211> 301
<212> DNA
<213> Homo sapien

<400> 284
caggtacaaa acgctattaa gtggcttaga atttgaacat ttgtggtctt tatttacttt 60
gcttcgtgtg tgggcaaaagc aacatcttcc ctaaataatatt attaccaaga aaagcaagaa 120
gcagattagg tttttgacaa acaaaacagg ccaaaagggg gctgacctgg agcagagcat 180
ggtgagaggc aaggcatgag agggcaagtt tgttgtggac agatctgtgc ctactttatt 240
actggagtaa aagaaaacaa agttcattga tgtcgaagga tatatacagt gttagaaatt 300
a 301

<210> 285
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 285
acatcaccat gatcggtacc cccacccatt atacgttgta tgtttacata aatactcttc 60
aatgatcatt agtgttttaa aaaaaatact gaaaactcct tctgcatccc aatctctaac 120

caggaaagca aatgctatatt acagacctgc aagccctccc tcaaacnaaa ctattttctgg 180
 attaaatatg tctgacttct tttgagggtca cagcactagg caaatgctat ttacgatctg 240
 caaaagctgt ttgaagagtc aaagcccca tgtgaacacg atttctggac cctgtaacag 300
 t 301

<210> 286
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 286
 taccactgca ttccagcctg ggtgacagag tgagactccg tctccaaaaa aaacttttggc 60
 tgtatattat ttttgcctta cagtggatca ttctagtagg aaaggacagt aagatttttt 120
 atcaaaatgt gtcatgccag taagagatgt tatattcttt tctcatttct tccccaccca 180
 aaaataagct accatatagc ttataagtct caaatttttg ctttttacta aaatgtgatt 240
 gtttctgttc attgtgtatg cttcatcacc tatattaggc aaattccatt ttttcccttg 300
 t 301

<210> 287
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 287
 tacagatctg ggaactaaat attaaaaatg agtgtggctg gatatatgga gaatgttggg 60
 cccagaagga acgtagagat cagatattac aacagctttg ttttgagggt tagaaatatg 120
 aaatgatttg gttatgaacg cacagttagg gcagcagggc cagaatcctg accctctgcc 180
 ccgtgggtat ctctcccca gcttggtgc ctcagtgtat cacagtattc cattttgttt 240
 gttgcatgtc ttgtgaagcc atcaagattt tctcgtctgt tttcctctca ttggtaatgc 300
 t 301

<210> 288
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 288
 gtacacctaa ctgcaaggac agctgaggaa tgtaatgggc agccgctttt aaagaagtag 60
 agtcaatagg aagacaaatt ccagttccag ctcagtctgg gtatctgcaa agctgcaaaa 120
 gatcttttaa gacaatttca agagaatatt tccttaaagt tggcaatttg gagatcatac 180
 aaaagcatct gcttttgtga ttttaatttag ctcactctggc cactggaaga atccaaacag 240
 tctgccttaa ttttggatga atgcatgatg gaaattcaat aatttagaaa gttaaaaaaa 300
 a 301

<210> 289
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (301)
 <223> n = A,T,C or G

<400> 289

```

ggtagactgt ttccatgtta tgtttctaca cattgctacc tcagtgtccc tggaaactta      60
gcttttgatg tctccaagta gtccaccttc atttaactct ttgaaactgt atcatctttg      120
ccaagtaaga gtggtggcct atttcagctg ctttgacaaa atgactggct cctgacttaa      180
cgttctataa atgaatgtgc tgaagcaaag tgcccatggg ggcggcgaan aagagaaaga      240
tgtgttttgt tttggactct ctgtgggtccc ttccaatgct gtgggtttcc aaccagnnga      300
a                                                                                   301

```

```

<210> 290
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 290
acactgagct cttcttgata aatatacaga atgcttggca tatacaagat tctatactac      60
tgactgatct gttcatttct ctcacagctc ttaccccaa aagcttttcc accctaagtg      120
ttctgacctc ctttttctaat cacagtaggg atagaggcag anccacctac aatgaacatg      180
gagttctatc aagaggcaga aacagcacag aatcccagtt ttaccattcg ctagcagtgc      240
tgccttgaac aaaaacattt ctccatgtct ctttttcttc atgcctcaag taacagtgag      300
a                                                                                   301

```

```

<210> 291
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 291
caggtacca tttcttctat cctagaaaca tttcatttta tgttgttgaa acataacaac      60
tatatcagct agatTTTTTT tctatgcttt acctgctatg gaaaatttga cacattctgc      120
tttactcttt tgtttatagg tgaatcacia aatgtatttt tatgtattct gtagtccaat      180
agccatggct gtttacttca ttttaatttat ttagcataaa gacattatga aaaggcctaa      240
acatgagctt cacttcccca ctaactaatt agcatctggt atttcttaac cgtaatgcct      300
a                                                                                   301

```

```

<210> 292
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 292
accttttagt agtaatgtct aataataaat aagaaatcaa ttttataagg tccatatagc      60
tgtattaaat aatttttaag tttaaaagat aaaataccat cattttaaat gttgggtattc      120
aaaaccaaag natataaccg aaaggaaaaa cagatgagac ataaaatgat ttgcnagatg      180
ggaaatatag tasttyatga atgttnatta aattccagtt ataatagtgg ctacacactc      240
tcactacaca cacagacccc acagtcctat atgccacaaa cacatttcca taacttgaaa      300
a                                                                                   301

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<210> 293
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 293
 ggtaccaagt gctgggtgcc aacctgttacc tgttctcact gaaaagtctg gctaattgctc 60
 ttgtgtagtc acttctgatt ctgacaatca atcaatcaat ggcctagagc actgactggt 120
 aacacaaaacg tcactagcaa agtagcaaca gctttaagtc taaatacaaa gctgttctgt 180
 gtgagaattt tttaaaaggc tacttgtata ataacccttg tcatttttaa tgtacctcgg 240
 ccgcgaccac gctaagccga attctgcaga tatccatcac actggcggcc gctcgagcat 300
 g 301

<210> 294
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 294
 tgacccataa caatatacac tagctatctt ttttaactgtc catcattagc accaatgaag 60
 attcaataaaa attaccttta ttcacacatc tcaaaaacaat tctgcaaatt cttagtgaag 120
 ttttaactata gtcacaganc ttaaataatt acattgtttt ctatgtctac tgaaaataag 180
 ttcactactt ttctgggata ttctttacaa aatcttatta aaattcctgg tattatcacc 240
 cccaattata cagtagcaca accaccttat gtagttttta catgatagct ctgtagaggt 300
 t 301

<210> 295
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 295
 gtactctttc tctccctccc tctgaattta attctttcaa cttgcaattt gcaaggatta 60
 cacatttcac tgtgatgtat attgtgttgc aaaaaaaaaa gtgtctttgt ttaaaattac 120
 ttggtttgtg aatccatctt gctttttccc cattggaact agtcattaac ccatctctga 180
 actggtagaa aaacrtctga agagctagtc tatcagcatc tgacagggtga attggatggg 240
 tctcagaacc atttcaccca gacagcctgt ttctatcctg ttttaataaat tagtttgggt 300
 tctct 305

<210> 296
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 296
 aggtactatg ggaagctgct aaaataatat ttgatagtaa aagtatgtaa tgtgctatct 60
 cacctagtag taaactaaaa ataaactgaa actttatgga atctgaagtt attttccttg 120
 attaaataga attaataaac caatatgagg aaacatgaaa ccatgcaatc tactatcaac 180
 tttgaaaaag tgattgaacg aaccacttag ctttcagatg atgaacactg ataagtcatt 240

tgtcattact ataaatttta aaatctgtta ataagatggc ctatagggag gaaaaagggg 300
 C 301

<210> 297
 <211> 300
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(300)
 <223> n = A,T,C or G

<400> 297
 actgagtttt aactggacgc caagcaggca aggctggaag gttttgctct ctttgtgcta 60
 aaggttttga aaaccttgaa ggagaatcat tttgacaaga agtacttaag agtctagaga 120
 acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt 180
 tccatcattg ggagtgcact ggccatccct caaaatttgt ctgggctggc ctgagtggtc 240
 accgcacctc ggccgcgacc acgctaagcc gaattctgca gatatccatc acactggcgg 300

<210> 298
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 298
 tatggggtttt gtcacccaaa agctgatgct gagaaaggcc tccctggggc ccctcccgcg 60
 ggcattctgag agacctggtg ttccagtgtt tctggaaatg ggtcccagtg ccgccggctg 120
 tgaagctctc agatcaatca cgggaaggggc ctggcggtgg tggccacctg gaaccacctt 180
 gtccctgtctg ttacatttc actaycaggt tttctctggg cattacnatt tgttccccta 240
 caacagtgac ctgtgcattc tgctgtggcc tgctgtgtct gcagggtggc ctcagcgagg 300
 t 301

<210> 299
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 299
 gttttgagac ggagtttcac tcttgttgcc cagactggac tgcaatggca gggctctctgc 60
 tcaactgcacc ctctgcctcc caggttcgag caattctcct gcctcagcct cccaggtagc 120
 tgggattgca ggctcacgcc accataccca gctaattttt ttgtattttt agtagagacg 180
 gagtttcgcc atgttggcca gctgggtctca aactcctgac ctcaagcgac ctgcctgcct 240
 cggcctccca aagtgtctga attataggca tgagtcaaca cgcccagcct aaagatatatt 300
 t 301

<210> 300
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 300

attcagtttt	atttgctgcc	ccagtatctg	taaccaggag	tgccacaaaa	tcttgccaga	60
tatgtcccac	acccactggg	aaaggctccc	acctggctac	ttcctctatc	agctgggtca	120
gctgcattcc	acaaggttct	cagcctaata	agtttacta	cctgccagtc	tcaaaactta	180
gtaaagcaag	accatgacat	tccccacgg	aaatcagagt	ttgccccacc	gtcttggtac	240
tataaagcct	gcctctaaca	gtccttgctt	cttcacacca	atccccgagc	catcccccat	300
g						301

<210> 301

<211> 301

<212> DNA

<213> Homo sapien

<400> 301

ttaaattttt	gagaggataa	aaaggacaaa	taatctagaa	atgtgtcttc	ttcagtctgc	60
agaggacccc	aggtctccaa	gcaaccacat	ggtcaagggc	atgaataatt	aaaagttggt	120
gggaactcac	aaagaccctc	agagctgaga	caccacaaac	agtgggagct	cacaaagacc	180
ctcagagctg	agacaccac	aacagtggga	gtcacaaaag	accctcagag	ctgagacacc	240
cacaacagca	cctcgttcag	ctgccacatg	tgtgaataag	gatgcaatgt	ccagaagtgt	300
t						301

<210> 302

<211> 301

<212> DNA

<213> Homo sapien

<400> 302

aggtacacat	ttagcttggtg	gtaaatgact	cacaaaaactg	attttaaaat	caagttaatg	60
tgaattttga	aaattactac	ttaatcctaa	ttcacaataa	caatggcatt	aaggtttgac	120
ttgagttggt	tcttagtatt	atztatggt	aataggctct	taccacttgc	aaataactgg	180
ccacatcatt	aatgactgac	ttcccagtaa	ggctctctaa	ggggtaagta	ggaggatcca	240
caggatttga	gatgctaagg	ccccagagat	cgtttgatcc	aaccctctta	ttttcagagg	300
g						301

<210> 303

<211> 301

<212> DNA

<213> Homo sapien

<400> 303

aggtaccaac	tgtggaaata	ggtagaggat	cattttttct	ttccatatca	actaagttgt	60
atattgtttt	ttgacagttt	aacacatctt	cttctgtcag	agattctttc	acaatagcac	120
tggctaattg	aactaccgct	tgcattgtaa	aaatgggtgt	ttgtgaaatg	atcataggcc	180
agtaacgggt	atgtttttct	aactgatctt	ttgctcgttc	caaagggacc	tcaagacttc	240
catcgatttt	atatctgggg	tctagaaaag	gagttaatct	gttttccctc	ataaattcac	300
c						301

<210> 304

<211> 301

<212> DNA

<213> Homo sapien

<400> 304

acatggatgt	tattttgcag	actgtcaacc	tgaatttgta	tttgcttgac	attgcctaata	60
------------	------------	------------	------------	------------	-------------	----

tattagtttc agtttcagct taccactttt ttgtctgcaa catgcaraas agacagtgcc	120
cttttttagtg tatcatatca ggaatcatct cacattgggt ttgtgccatta ctggtgcagt	180
gactttcagc cacttgggta aggtggagtt ggccatatgt ctccactgca aaattactga	240
ttttcctttt gtaattaata agtgtgtgtg tgaagattct ttgagatgag gtatatatct	300
c	301

<210> 305
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 305	
gangtacagc gtggtcaagg taacaagaag aaaaaaatgt gagtggcatc ctgggatgag	60
caggggggaca gacctggaca gacacgttgt catttgctgc ttgtgggtagg aaaatgggag	120
taaaggagga gaaacagata caaatctcc aactcagtat taaggatttc tcatgcctag	180
aatattggta gaaacaagaa tacattcata tggcaaataa ctaaccatgg tggaacaaaa	240
ttctgggatt taagttggat accaangaaa ttgtattaaa agagctgttc atggaataag	300
a	301

<210> 306
 <211> 8
 <212> PRT
 <213> Homo sapien

<400> 306
 Val Leu Gly Trp Val Ala Glu Leu
 1 5

<210> 307
 <211> 637
 <212> DNA
 <213> Homo sapien

<400> 307	
acaggggratg aagggaaagg gagaggatga ggaagccccc ctggggattt ggtttggtcc	60
ttgtgatcag gtggtctatg gggcttatcc ctacaaagaa gaatccagaa atagggggcac	120
attgaggaat gatacttgag cccaaagagc attcaatcat tgttttattt gccttmtttt	180
cacaccattg gtgagggagg gattaccacc ctggggttat gaagatgggt gaacacccca	240
cacatagcac cggagatatg agatcaacag tttcttagcc atagagattc acagcccaga	300
gcaggaggac gcttgccacac catgcaggat gacatggggg atgcgctcgg gattgggtgtg	360
aagaagcaag gactgttaga ggcaggcttt atagtaacaa gacgggtggg caaactctga	420
tttccgtggg ggaatgtcat ggtcttgctt tactaagttt tgagactggc aggtagtga	480
actcattagg ctgagaacct tgtggaatgc acttgaccca sctgatagag gaagtagcca	540
ggtgggagcc tttcccagtg ggtgtgggac atatctggca agattttgtg gcactcctgg	600
ttacagatac tggggcagca aataaaactg aatcttg	637

<210> 308
 <211> 647
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(647)

<223> n = A,T,C or G

<400> 308

acgattttca	ttatcatgta	aatcgggtca	ctcaaggggc	caaccacagc	tgggagccac	60
tgctcagggg	aagggtcata	tgggactttc	tactgcccac	ggttctatac	aggatataaa	120
ggngcctcac	agtatagatc	tggtagcaaa	gaagaagaaa	caaacactga	tctctttctg	180
ccacccctct	gaccctttgg	aactcctctg	accctttaga	acaagcctac	ctaatatctg	240
ctagagaaaa	gaccaacaac	ggcctcaaag	gatctcttac	catgaaggtc	tcagctaatt	300
cttggctaag	atgtgggttc	cacattaggt	tctgaatatg	gggggaaggg	tcaatttgct	360
cattttgtgt	gtggataaag	tcaggatgcc	cagggggccag	agcagggggc	tgcttgcttt	420
gggaacaatg	gctgagcata	taaccatagg	ttatggggaa	caaaacaaca	tcaaagtcac	480
tgtatcaatt	gccatgaaga	cttgagggac	ctgaatctac	cgattcatct	taaggcagca	540
ggaccagttt	gagtggcaac	aatgcagcag	cagaatcaat	ggaaacaaca	gaatgattgc	600
aatgtccttt	tttttctcct	gcttctgact	tgataaaagg	ggaccgt		647

<210> 309

<211> 460

<212> DNA

<213> Homo sapien

<400> 309

actttatagt	ttaggctgga	cattggaaaa	aaaaaaaaagc	cagaacaaca	tgtgatagat	60
aatatgattg	gctgcacact	tccagactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gagcacatct	tcagcaagag	ggggaaatac	tcatcatttt	tggccagcag	ttgtttgatc	180
accaaacatc	atgccagaat	actcagcaaa	ccttcttagc	tcttgagaag	tcaaagtcag	240
ggggaattta	ttcctggcaa	ttttaattgg	actccttatg	tgagagcagc	ggctacccag	300
ctgggggtgg	ggagcgaacc	cgtcactagt	ggacatgcag	tggcagagct	cctggtaacc	360
acctagagga	atacacaggc	acatgtgtga	tgccaagcgt	gacacctgta	gcactcaaat	420
ttgtcttggt	tttgtctttc	ggtgtgtaag	attcttaagt			460

<210> 310

<211> 539

<212> DNA

<213> Homo sapien

<400> 310

acgggactta	tcaaataaag	ataggaaaag	aagaaaactc	aaatattata	ggcagaaatg	60
ctaaagggtt	taaaatatgt	caggattgga	agaaggcatg	gataaagaac	aaagttcagt	120
taggaaagag	aaacacagaa	ggaagagaca	caataaaagt	cattatgtat	tctgtgagaa	180
gtcagacagt	aagatttggt	ggaaatgggt	tggtttggtg	tatgggtatg	attttagcaa	240
taatctttat	ggcagagaaa	gctaaaatcc	tttagcttgc	gtgaatgatc	acttgctgaa	300
ttcctcaagg	taggcatgat	gaaggagggt	ttagaggaga	cacagacaca	atgaactgac	360
ctagatagaa	agccttagta	tactcagcta	ggaatagtga	ttctgagggc	acactgtgac	420
atgattatgt	cattacatgt	atggtagtga	tggggatgat	aggaaggaag	aacttatggc	480
atattttcac	ccccacaaaa	gtcagttaaa	tattgggaca	ctaaccatcc	aggtcaaga	539

<210> 311

<211> 526

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(526)
 <223> n = A,T,C or G

<400> 311

caaattttgag ccaatgacat agaattttac aaatcaagaa gcttattctg gggccatttc	60
ttttgacgtt ttctctaaac tactaaagag gcattaatga tccataaatt atattatcta	120
catttacagc atttaaaatg tggtcagcat gaaatattag ctacagggga agctaaataa	180
attaacatg gaataaagat ttgtccttaa atataatcta caagaagact ttgatatttg	240
tttttcacaa gtgaagcatt cttataaagt gtcataacct ttttggggaa actatgggaa	300
aaaatgggga aactctgaag ggttttaagt atcttacctg aagctacaga ctccataacc	360
tctctttaca gggagctcct gcagccccta cagaaatgag tggctgagat tcttgattgc	420
acagcaagag cttctcatct aaaccctttc cctttttagt atctgtgtat caagtataaa	480
agttctataa actgtagtnt acttatttta atccccaaag cacagt	526

<210> 312
 <211> 500
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(500)
 <223> n = A,T,C or G

<400> 312

cctctctctc cccaccccct gactctagag aactggggtt tctcccagta ctccagcaat	60
tcatttctga aagcagttga gccactttat tccaaagtac actgcagatg ttcaaactct	120
ccatttctct ttccttcca cctgccagtt ttgctgactc tcaacttgtc atgagtgtaa	180
gcattaagga cattatgctt cttcgattct gaagacaggc cctgctcatg gatgactctg	240
gcttcttagg aaaatatatt tcttccaaaa tcagtaggaa atctaaactt atccccctt	300
tgcagatgtc tagcagcttc agacatttgg ttaagaacct atgggaaaaa aaaaaatcct	360
tgctaattgt gtttcctttg taaaccanga ttcttatttg nctggatatag aatatcagct	420
ctgaacgtgt ggtaaagatt tttgtgtttg aatataggag aaatcagttt gctgaaaagt	480
tagtcttaat tatctattgg	500

<210> 313
 <211> 718
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(718)
 <223> n = A,T,C or G

<400> 313

ggagatttgt gtggtttgca gccgagggag accaggaaga tctgcatggt gggaaggacc	60
tgatgataca gaggtgagaa ataagaaagg ctgctgactt taccatctga ggccacacat	120
ctgctgaaat ggagataatt aacatcacta gaaacagcaa gatgacaata taatgtctaa	180
gtagtacat gtttttgcac atttccagcc cttttaaata tccacacaca caggaagcac	240
aaaagggaagc acagagatcc ctgggagaaa tgcccggccg ccctcttggg tcatcgatga	300
gcctcgccct gtgcctgntc ccgcttgtga gggaaggaca ttagaaaatg aattgatgtg	360
ttccttaaaag gatggcagga aaacagatcc tggtgtggat atttatttga acgggattac	420

agatttgaaa tgaagtcaca aagtgagcat taccaatgag aggaaaacag acgagaaaat	480
cttgatgggt cacaagacat gcaacaaaca aaatggaata ctgtgatgac acgagcagcc	540
aactggggag gagataccac ggggcagagg tcaggattct ggccctgctg cctaactgtg	600
cgttatacca atcatttcta tttctaccct caaacaagct gtngaataac tgacttacgg	660
ttcttntggc ccacatttcc atnatccacc ccntcntttt aannttantic caaantgt	718

<210> 314

<211> 358

<212> DNA

<213> Homo sapien

<400> 314

gtttattttac attacagaaa aaacatcaag acaatgtata ctattttcaaa tatatccata	60
cataatcaaa tatagctgta gtacatgttt tcattgggtg agattaccac aaatgcaagg	120
caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg tgtagtccaa	180
gctctcggtg gtccagccac tgtgaaacat gctcccttta gattaacctc gtggacgctc	240
ttgttgtatt gctgaactgt agtgccctgt attttgcttc tgtctgtgaa ttctgttgct	300
tctggggcat ttccttgtga tgcagaggac caccacacag atgacagcaa tctgaatt	358

<210> 315

<211> 341

<212> DNA

<213> Homo sapien

<400> 315

taccacctcc ccgctggcac tgatgagccg catcaccatg gtcaccagca ccatgaaggc	60
ataggtgatg atgaggacat ggaatgggcc cccaaggatg gtctgtccaa agaagcgagt	120
gacccccatt ctgaagatgt ctggaacctc taccagcagg atgatgatag ccccaatgac	180
agtcaccagc tccccgacca gccggatata gtccttaggg gtcatgtagg ctctctgaag	240
tagcttctgc tgtaagaggg tggtgtcccc ggggctcgtg cggttattgg tcttgggctt	300
gagggggcgg tagatgcagc acatggtgaa gcagatgatg t	341

<210> 316

<211> 151

<212> DNA

<213> Homo sapien

<400> 316

agactgggca agactcttac gccccacact gcaatttggt cttgttgccg tatccattta	60
tgtgggcctt tctcgagttt ctgattataa acaccactgg agcgatgtgt tgactggact	120
cattcaggga gctctggttg caatattagt t	151

<210> 317

<211> 151

<212> DNA

<213> Homo sapien

<400> 317

agaactagtg gatcctaata aaataacctga aacatatatt ggcattttatc aatgggctcaa	60
atcttcattt atctctggcc ttaacctggg ctccctgaggc tgcggccagc agatcccagg	120
ccaggggctct gttcttgcca cacctgcttg a	151

<210> 318

<211> 151

<212> DNA

<213> Homo sapien

<400> 318

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actggtggga ggcgctgttt agttggctgt tttcagaggg gtctttcgga gggacctcct    60
gctgcaggct ggagtgtctt tattcctggc gggagaccgc acattccact gctgaggctg    120
tgggggcggg ttatcaggca gtgataaaca t                                     151
```

<210> 319

<211> 151

<212> DNA

<213> Homo sapien

<400> 319

```
aactagtgga tccagagcta taggtacagt gtgatctcag ctttgcaaac acattttcta    60
catagatagt actaggtatt aatagatatg taaagaaaga aatcacacca ttaataatgg    120
taagattggg tttatgtgat tttagtgggt a                                     151
```

<210> 320

<211> 150

<212> DNA

<213> Homo sapien

<400> 320

```
aactagtgga tccactagtc cagtgtggtg gaattccatt gtgttggggg tctagatcgc    60
gagcggtgc cctttttttt tttttttttg ggggggaatt tttttttttt aatagttatt    120
gagtgttcta cagcttacag taaataccat                                     150
```

<210> 321

<211> 151

<212> DNA

<213> Homo sapien

<400> 321

```
agcaactttg tttttcatcc aggttatctt aggccttagga tttcctctca cactgcagtt    60
taggggtggc ttgtaaccag ctatggcata ggtgttaacc aaaggctgag taaacatggg    120
tgcctctgag aaatcaaagt cttcatacac t                                     151
```

<210> 322

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(151)

<223> n = A,T,C or G

<400> 322

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atccagcatc ttctctgtt ttttgccttc cttttcttc ttcttasatt ctgcttgagg    60
tttgggcttg gtcagtttgc cacagggett ggagatgggt acagtcttct ggcattcggc    120
attgtgcagg gctcgttca nacttccagt t                                     151
```

<210> 323

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(151)

<223> n = A,T,C or G

<400> 323

tgaggacttg	tkttcttttt	ctttattttt	aatcctctta	ckttgtaaat	atattgccta	60
nagactcant	tactaccag	tttgtggtt	twtgaggagaa	atgtaactgg	acagttagct	120
gttcaatyaa	aaagacactt	ancccatgtg	g			151

<210> 324

<211> 461

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(461)

<223> n = A,T,C or G

<400> 324

acctgtgtgg	aatttcagct	ttcctcatgc	aaaaggattt	tgtatccccg	gcctacttga	60
agaagtggc	agctaaagga	atccagggtg	ttggttggtg	tgtaataacc	tttgatgaaa	120
agagttacta	cgaatcccat	cttggttcca	gctatatcac	tgacagcatg	gtagaagact	180
gcgaacctca	cttctagact	ttcacgggtg	gacgaaacgg	gttcagaaac	tgccaggggc	240
ctcatcacag	gatatacaaaa	taccctttgt	gctaccacag	ccctggggaa	tcaggtgact	300
cacacaaatg	caatagttgg	tcactgcatt	tttacctgaa	ccaaagctaa	acccgggtgt	360
gccaccatgc	accatggcat	gccagagttc	aacactgttg	ctcttgaaaa	ttgggtctga	420
aaaaacgcac	aagagccct	gccctgccct	agctgangca	c		461

<210> 325

<211> 400

<212> DNA

<213> Homo sapien

<400> 325

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<210> 326

<211> 1215

<212> DNA

<213> Homo sapien

<400> 326

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<210> 327

<211> 220

<212> PRT

<213> Homo sapien

<400> 327

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			20					25					30		
Leu	Ser	Ala	Ala	His	Cys	Phe	Gln	Asn	Ser	Tyr	Thr	Ile	Gly	Leu	Gly
		35					40					45			
Leu	His	Ser	Leu	Glu	Ala	Asp	Gln	Glu	Pro	Gly	Ser	Gln	Met	Val	Glu
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Ala	Ser	Leu	Ser	Val	Arg	His	Pro	Glu	Tyr	Asn	Arg	Pro	Leu	Leu	Ala
65				70						75				80	
Asn	Asp	Leu	Met	Leu	Ile	Lys	Leu	Asp	Glu	Ser	Val	Ser	Glu	Ser	Asp
			85					90						95	
Thr	Ile	Arg	Ser	Ile	Ser	Ile	Ala	Ser	Gln	Cys	Pro	Thr	Ala	Gly	Asn
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Ser	Cys	Leu	Val	Ser	Gly	Trp	Gly	Leu	Leu	Ala	Asn	Gly	Arg	Met	Pro
		115					120					125			
Thr	Val	Leu	Gln	Cys	Val	Asn	Val	Ser	Val	Val	Ser	Glu	Glu	Val	Cys
	130					135					140				
Ser	Lys	Leu	Tyr	Asp	Pro	Leu	Tyr	His	Pro	Ser	Met	Phe	Cys	Ala	Gly
145				150						155					160
Gly	Gly	Gln	Asp	Gln	Lys	Asp	Ser	Cys	Asn	Gly	Asp	Ser	Gly	Gly	Pro
			165						170					175	
Leu	Ile	Cys	Asn	Gly	Tyr	Leu	Gln	Gly	Leu	Val	Ser	Phe	Gly	Lys	Ala
		180						185					190		
Pro	Cys	Gly	Gln	Val	Gly	Val	Pro	Gly	Val	Tyr	Thr	Asn	Leu	Cys	Lys
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<210> 328

<211> 234
 <212> DNA
 <213> Homo sapien

<400> 328
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 atccgcagtg ggtgctgtca gccacacact gttccagaa ctctacacc atcgggctgg 180
 gcctgcacag tcttgaggcc gaccaagagc caggagacca gatggtggag gcc 234

<210> 329
 <211> 77
 <212> PRT
 <213> Homo sapien

<400> 329
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 20 25 30
 Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val Leu Ser Ala Thr
 35 40 45
 His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly Leu His Ser Leu
 50 55 60
 Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu Ala
 65 70 75

<210> 330
 <211> 70
 <212> DNA
 <213> Homo sapien

<400> 330
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 gctgcagcca 70

<210> 331
 <211> 22
 <212> PRT
 <213> Homo sapien

<400> 331
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 Val Ser Gly Ser Cys Ser
 20

<210> 332
 <211> 2507
 <212> DNA
 <213> Homo sapien

<400> 332
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<210> 333

<211> 3030

<212> DNA

<213> Homo sapien

<400> 333

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<210> 334

<211> 2417

<212> DNA

<213> Homo sapien

<400> 334

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<210> 335

<211> 2984

<212> DNA

<213> Homo sapien

<400> 335

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<210> 336

<211> 147

<212> PRT

<213> Homo sapien

<400> 336

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			20					25					30		
Pro	Lys	Gln	Pro	Gln	Lys	Arg	Ser	Arg	Ala	Ala	Phe	Ser	His	Thr	Gln
			35					40					45		
Val	Ile	Glu	Leu	Glu	Arg	Lys	Phe	Ser	His	Gln	Lys	Tyr	Leu	Ser	Ala
			50					55				60			
Pro	Glu	Arg	Ala	His	Leu	Ala	Lys	Asn	Leu	Lys	Leu	Thr	Glu	Thr	Gln
65					70					75					80

Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys Thr Lys Arg Lys Gln
 85 90 95
 Leu Ser Ser Glu Leu Gly Asp Leu Glu Lys His Ser Ser Leu Pro Ala
 100 105 110
 Leu Lys Glu Glu Ala Phe Ser Arg Ala Ser Leu Val Ser Val Tyr Asn
 115 120 125
 Ser Tyr Pro Tyr Tyr Pro Tyr Leu Tyr Cys Val Gly Ser Trp Ser Pro
 130 135 140
 Ala Phe Trp
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<210> 337
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 337
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 1 5

<210> 338
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 338
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 1 5

<210> 339
 <211> 318
 <212> PRT
 <213> Homo sapien

<400> 339
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 Cys Thr Ser Thr Val Gln Leu Pro Gly Lys Val Val Val Val Thr Gly
 35 40 45
 Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg
 50 55 60
 Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu
 65 70 75 80
 Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val
 85 90 95
 Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys
 100 105 110
 Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala
 115 120 125
 Gly Val Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met
 130 135 140
 His Ile Gly Val Asn His Leu Gly His Phe Leu Leu Thr His Leu Leu

145 150 155 160
 Leu Glu Lys Leu Lys Glu Ser Ala Pro Ser Arg Ile Val Asn Val Ser
 165 170 175
 Ser Leu Ala His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly
 180 185 190
 Glu Lys Phe Tyr Asn Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala
 195 200 205
 Asn Ile Leu Phe Thr Gln Glu Leu Ala Arg Arg Leu Lys Gly Ser Gly
 210 215 220
 Val Thr Thr Tyr Ser Val His Pro Gly Thr Val Gln Ser Glu Leu Val
 225 230 235 240
 Arg His Ser Ser Phe Met Arg Trp Met Trp Trp Leu Phe Ser Phe Phe
 245 250 255
 Ile Lys Thr Pro Gln Gln Gly Ala Gln Thr Ser Leu His Cys Ala Leu
 260 265 270
 Thr Glu Gly Leu Glu Ile Leu Ser Gly Asn His Phe Ser Asp Cys His
 275 280 285
 Val Ala Trp Val Ser Ala Gln Ala Arg Asn Glu Thr Ile Ala Arg Arg
 290 295 300
 Leu Trp Asp Val Ser Cys Asp Leu Leu Gly Leu Pro Ile Asp
 305 310 315

<210> 340
 <211> 483
 <212> DNA
 <213> Homo sapien

<400> 340
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 ggttgtgggg gcggttttatc aggcagtgat aaacataaga tgtcatttcc ttgactccgg 240
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 gtcctaaacg tgacatcact gatgctcttc tcgggggtgc tgatggcccg cttgggtcacg 360
 tgctcaatct cgccattcga ctcttgctcc aaactgtatg aagacacctg actgcacggt 420
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 ctg 483

<210> 341
 <211> 344
 <212> DNA
 <213> Homo sapien

<400> 341
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 gctgccttac aagtatttaa tattttactt cttccataa agagtagctc aaaatatgca 180
 attaatttaa taatttctga tgatggtttt atctgcagta atatgtatat catctattag 240
 aatttactta atgaaaaact gaagagaaca aaatttgtaa ccactagcac ttaagtactc 300
 ctgattctta acattgtctt taatgaccac aagacaacca acag 344

<210> 342
 <211> 592
 <212> DNA
 <213> Homo sapien

<400> 342

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cctggcaggt	aaaccaatgc	caagagagtg	atggaaacca	ttggcaagac	tttgttgatg	180
accaggattg	gaattttata	aaaatattgt	tgatgggaag	ttgctaaagg	gtgaattact	240
tccctcagaa	gagtgtaaag	aaaagtcaga	gatgctataa	tagcagctat	tttaattggc	300
aagtgccact	gtggaaagag	ttcctgtgtg	tgctgaagtt	ctgaaggcca	gtcaaattca	360
tcagcatggg	ctgtttgggtg	caaatgcaaa	agcacaggtc	tttttagcat	gctgggtctct	420
cccgtgtcct	tatgcaaata	atcgtcttct	tctaaatttc	tcctaggctt	cattttccaa	480
agttcttctt	ggtttgtgat	gtcttttctg	ctttccatta	attctataaa	atagtatggc	540
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<210> 343

<211> 382

<212> DNA

<213> Homo sapien

<400> 343

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aaaccaccaa	gctgaaaaaa	aa				382

<210> 344

<211> 536

<212> DNA

<213> Homo sapien

<400> 344

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caactaacct	gccactaata	gttatgtcat	ccctcttatt	aatcatcatc	ctagccctaa	480
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<210> 345

<211> 251

<212> DNA

<213> Homo sapien

<400> 345

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<210> 346
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(282)
 <223> n = A,T,C or G

<400> 346
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 agggagacta tacctggctc ttgccctaag tgagaggtct tccctccgc accaaaaaat 180
 agaaaggctt tctatttcac tggcccaggt agggggaagg agagtaactt tgagtctgtg 240
 ggtctcattt cccaaggtgc cttcaatgct catnaaaacc aa 282

<210> 347
 <211> 201
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(201)
 <223> n = A,T,C or G

<400> 347
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 taaatataac ttttaaaaana ntactancag cttttaccta ngctcctaaa tgcttgtaaa 120
 tctgagactg actggaccca cccagaccca gggcaaagat acatgttacc atatcatctt 180
 tataaagaat ttttttttgc c 201

<210> 348
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 348
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 agagagaaca gtgccagaat gaaactgacc ctaagtccca ggtgcccctg ggcaggcaga 120
 aggagacact cccagcatgg aggagggtt atcttttcat cctaggtcag gtctacaatg 180
 ggggaagggtt ttattataga actcccaaca gccacctca ctctgccac ccacccgatg 240
 gccctgcctc c 251

<210> 349
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 349
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 aacccctgag gatgccagag ctatgggtcc agaacatggt gtggtattat caacagagtt 120
 cagaagggtc tgaactctac gtgttaccag agaacataat gcaattcatg cattccactt 180
 agcaattttg taaaatacca gaaacagacc ccaagagtct ttcaagatga ggaaaattca 240

actcctgggtt t

251

<210> 350

<211> 908

<212> DNA

<213> Homo sapien

<400> 350

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tatcaatatg caggagccat cttgcagggt tgatgctgggt tatactggac aacactgtga	840
aaaaaggac tacagtgttc tatacgttgt tcccggctct gtacgatttc agtatgtctt	900
aatcgcag	908

<210> 351

<211> 472

<212> DNA

<213> Homo sapien

<400> 351

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cattaacttg attttaaaat cagwtttgyg agtcatttac cacaagctaa atgtgtacac	180
tatgataaaa acaaccattg tattcctgtt tttctaaaca gtcctaattt ctaacactgt	240
atatatcctt cgacatcaat gaacttttgt ttcttttact ccagtaataa agtaggcaca	300
gatctgtcca caacaaactt gccctctcat gccttgccctc tcaccatgct ctgctccagg	360
tcagccccct ttggcctgt ttgttttgtc aaaaacctaa tctgcttctt gcttttcttg	420
gtaatatata tttagggaag atgttgcttt gccacacac gaagcaaagt aa	472

<210> 352

<211> 251

<212> DNA

<213> Homo sapien

<400> 352

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tgtggataag gccagggtcaa tggctgcaag catgcagaga aagagggtaca tcggagcgtg	120
caggctgcgt tccgtcctta cgatgaagac cacgatgcag tttccaaaca ttgccactac	180
atacatggaa aggaggggga agccaaccca gaaatgggct ttctctaate ctgggatacc	240
aataagcaca a	251

<210> 353

<211> 436

<212> DNA

<213> Homo sapien

<400> 353

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cacattatgg	tattattact	atactgatta	tatttatcat	gtgacttcta	attaraaaat	120
gtatccaaaa	gcaaaacagc	agatatata	aattaaagag	acagaagata	gacattaaca	180
gataaggcaa	cttatacatt	gacaatccaa	atccaatata	tttaaacatt	tgggaaatga	240
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tcattgtctga	raaggctctc	ccttcaatgg	ggatgacaaa	ctccaaatgc	cacacaaatg	360
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gggctcctaa	tgtagt					436

<210> 354

<211> 854

<212> DNA

<213> Homo sapien

<400> 354

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<210> 355

<211> 676

<212> DNA

<213> Homo sapien

<400> 355

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<210> 356

<211> 574

<212> DNA

<213> Homo sapien

<400> 356

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caagcttccc	atgtgtagat	ctcagtgcct	atgagtatct	gacacctgtt	cctctcttca	180
gtctcttagg	gaggcttaaa	tctgtctcag	gtgtgctaag	agtgccagcc	caaggkggtc	240
aaaagtccac	aaaactgcag	tctttgctgg	gatagtaagc	caagcagtgc	ctggacagca	300
gagttctttt	cttgggcaac	agataaccag	acaggactct	aatcgtgctc	ttattcaaca	360
ttcttctgtc	tctgcctaga	ctggaataaa	aagccaatct	ctctcgtggc	acaggggaagg	420
agatacaagc	tcgtttacat	gtgatagatc	taacaaaggc	atctaccgaa	gtctgggtctg	480
gataagcggc	acagggagct	cttaggtcag	cgctgctggg	tggaggacat	tcctgagtcc	540
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<210> 357

<211> 393

<212> DNA

<213> Homo sapien

<400> 357

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aagccacaac	caaracttga	ttttatcaac	aaaaaccctt	aaatataaac	ggsaaaaaag	180
atagatataa	ttattccagt	ttttttaaaa	cttaaaarat	attccattgc	cgaattaara	240
araarataag	tgttatatgg	aaagaagggc	attcaagcac	actaaaraaa	cctgaggkaa	300
gcataatctg	tacaaaatta	aactgtcctt	tttggcattt	taacaaattt	gcaacgktct	360
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<210> 358

<211> 630

<212> DNA

<213> Homo sapien

<400> 358

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ttaatgttta	taggaaaatg	atgagtttat	gacaaaggaa	gtagatagtg	ttttacaaga	120
gcatagagta	gggaagctaa	tccagcacag	ggaggtcaca	gagacatccc	taaggaagtg	180
gagtttaaac	tgagagaagc	aagtgcctaa	actgaaggat	gtgttggaaga	agaagggaga	240
gtagaacaat	ttgggcagag	ggaaccttat	agaccctaag	gtgggaaggt	tcaaagaact	300
gaaagagagc	tagaacagct	ggagccgttc	tccggtgtaa	agaggagtca	aagagataag	360
attaaaagatg	tgaagattaa	gatcttggtg	gcattcaggg	attggcactt	ctacaagaaa	420
tcactgaagg	gagtaatgtg	acattacttt	tcatttcagg	atggccattc	taactccagg	480
gggtagactg	gactaggtaa	gactggaggc	aggtagacct	cttctaaggc	ctgcgatagt	540
gaaagacaaa	aataagtggg	gaaattcagg	ggatagtga	aatcagtagg	acttaatgag	600
caagccagag	gttcctccac	aacaaccagt				630

<210> 359

<211> 620

<212> DNA

<213> Homo sapien

<400> 359

acagcattcc	aaaatataca	tctagagact	aarrgtaaat	gctctatagt	gaagaagtaa	60
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ctcaccagaa	gaataaagt	ctctgccagt	tattaaagga	ttactgctgg	tgaattaaat	180
atggcattcc	ccaagggaaa	tagagagatt	cttctggatt	atgttcaata	tttatttcac	240
aggattaact	gttttaggaa	cagatataaa	gcttcgccac	ggaagagatg	gacaaagcac	300
aaagacaaca	tgatacctta	ggaagcaaca	ctaccctttc	aggcataaaa	tttggagaaa	360
tgcaacatta	tgcttcatga	ataatatgta	gaaagaaggt	ctgatgaaaa	tgacatcctt	420
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aatgtcattg	acttatcaaa	tactatcttg	gcatataacc	tatgaaggca	aaactaaaca	540
aacaaaaagc	tcacaccaaa	caaaaccatc	aacttatttt	gtattctata	acatacgaga	600
ctgtaaagat	gtgacagtgt					620

<210> 360

<211> 431

<212> DNA

<213> Homo sapien

<400> 360

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tactcatcat	ttttggccag	cagttgtttg	atcaccaaac	atcatgccag	aatactcagc	180
aaaccttctt	agctcttgag	aagtcaaagt	ccgggggaat	ttattcctgg	caattttaat	240
tggaactcct	atgtgagagc	agcggctacc	cagctggggg	ggtggagcga	acccgtcact	300
agtggacatg	cagtggcaga	gctcctggta	accacctaga	ggaatacaca	ggcacatgtg	360
tgatgccaa	cgtgacacct	gtagcactca	aatttgtctt	gtttttgtct	ttcgggtgtg	420
agattcttag	t					431

<210> 361

<211> 351

<212> DNA

<213> Homo sapien

<400> 361

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ttgggtcttc	tggtctcttg	ccaagtttcc	cagccactgc	agggagaaat	atcgggaggt	180
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caatcctgga	ttcaatgtct	gaaacctcgc	tctctgcttg	ctggacttct	gaggccgtca	300
ctgccactct	gtcctccagc	tctgacagct	cctcatctgt	ggctctgttg	t	351

<210> 362

<211> 463

<212> DNA

<213> Homo sapien

<400> 362

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tgtagatgag	ccggctgaag	atcttgcgca	tgcgcggctt	cagggcgaag	ttcttggcgc	120
ccccggtcac	agaaatgacc	aggttgggtg	ttttcagggt	ccagtgcctg	gtcagcagct	180
cgtaaaggat	ttccgcgtcc	gtgtcgcagg	acagacgtat	atacttccct	ttcttcccca	240
gtgtctcaaa	ctgaatatcc	ccaaaggcgt	cggtaggaaa	ttccttgggt	tgtttcttgt	300
agttccattt	ctcacttttg	ttgatctggg	tgccttccat	gtgctggctc	tgggcatagc	360
cacacttgca	cacattctcc	ctgataagca	cgatgggtgtg	gacaggaagg	aaggatttca	420
ttgagcctgc	ttatggaaac	tggtattgtt	agcttaaata	gac		463

<210> 363

<211> 653

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(653)

<223> n = A,T,C or G

<400> 363

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ctgagggcga	agcccgggct	gaagcaagaa	cccgcattgg	aattggagat	gaggctgtgt	480
ntggggccctg	gagctgggat	gacattgagt	ttgagctgct	gacctgggat	gaggaaggag	540
attttgagaga	tcctntggcc	agaattccat	ttaccttctg	ggccagatac	caccagaatg	600
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<210> 364

<211> 401

<212> DNA

<213> Homo sapien

<400> 364

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aaaacaaggt	ggatagatct	agaattgtaa	catttttaaga	aaaccatagc	atttgacaga	180
tgagaaagct	caattataga	tgcaaagtta	taactaaact	actatagtag	taaagaaata	240
catttcacac	ccttcatata	aattcactat	cttggcttga	ggcactccat	aaaatgtatc	300
acgtgcatag	taaatcttta	tatttgctat	ggcgttgac	tagaggactt	ggactgcaac	360
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<210> 365

<211> 356

<212> DNA

<213> Homo sapien

<400> 365

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taccagagca	tcaagtctct	gcagcaggct	attcttgggt	aaagaaatga	cttcacaaa	180
ctctccatcc	cctggctttg	gcttcggcct	tgcgttttcg	gcatcatctc	cgtaaatggt	240
gactgtcacg	atgtgtatag	tacagtttga	caagcctggg	tccatacaga	ccgctggaga	300
acattcggca	atgtccctt	tgtagccagt	ttcttcttcg	agctcccgga	gagcag	356

<210> 366

<211> 1851

<212> DNA

<213> Homo sapien

<400> 366

tcataccat	tgccagcagc	ggcaccgtta	gtcaggtttt	ctgggaatcc	cacatgagta	60
-----------	------------	------------	------------	------------	------------	----

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tcacttcctt	taagcctttg	tgactcttcc	tctgatgtca	gctttaagtc	ttgttctgga	180
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aagatacatc	aacattttgc	tcaagtagag	ggctgactat	acttgctgat	ccacaacata	360
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cttttcccca	tttagtatta	tggtggctgt	gggcttgta	taggtggttt	ttattacttt	1800
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<210> 367

<211> 668

<212> DNA

<213> Homo sapien

<400> 367

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acertataag	agcagtgtct	tggccattaa	tttatctttc	atrttagaca	gcrtagtgya	180
gagtgggtatt	tccatactca	tctggaatat	ttggatcagt	gccatgttcc	agcaacatta	240
acgcacattc	atcttcctgg	cattgtacgg	cctgtcagta	ttagacccaa	aaacaaatta	300
catatcttag	gaattcaaaa	taacattcca	cagctttcac	caactagtta	tatttaaagg	360
agaaaactca	tttttatgcc	atgtattgaa	atcaaaccga	cctcatgctg	atatagttgg	420
ctactgcata	cctttatcag	agctgtcctc	tttttggtgt	caaggacatt	aagttgacat	480
cgtctgtcca	gcaggagttt	tactacttct	gaattcccat	tggcagaggc	cagatgtaga	540
gcagtcctat	gagagtgaga	agacttttta	ggaaattgta	gtgcactagc	tacagccata	600
gcaatgattc	atgtaactgc	aaacactgaa	tagcctgcta	ttactctgcc	ttcaaaaaaa	660
aaaaaaaa						668

<210> 368

<211> 1512

<212> DNA

<213> Homo sapien

<400> 368

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gaagtagtaa	aactcstgct	ggacagacga	tgtcaactta	atgtccttga	caacaaaaag	840
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<210> 369

<211> 1853

<212> DNA

<213> Homo sapien

<400> 369

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<210> 370

<211> 2184

<212> DNA

<213> Homo sapien

<400> 370

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tttctctctga	gaactgcaac	aataaatata	aggatgctgg	attttgtcaa	atgccttttc	180
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ctgcggcagc	ttcgggataa	cttgaggctg	catcactggg	gaagaaacac	aytcctgtcc	360
gtggcgctga	tggctgagga	cagagcttca	gtgtggcttc	tctgcgactg	gcttcttcgg	420
ggagttcttc	cttcatagtt	catccatarg	gctccagagg	aaaattatat	tattttgtta	480
tggatgaaga	gtattacgtt	gtgcagatat	actgcagtgt	cttcatctct	tgatgtgtga	540
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<210> 371
 <211> 1855
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
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 <223> n = A,T,C or G

<400> 371

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<210> 372
 <211> 1059
 <212> DNA
 <213> Homo sapien

<400> 372

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caacttaatg	tccttgacaa	caaaaagagg	acagctctga	yaaaggccgt	acaatgccag	420
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<210> 373

<211> 1155

<212> DNA

<213> Homo sapien

<400> 373

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<210> 374

<211> 2000

<212> DNA

<213> Homo sapien

<400> 374

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<210> 375

<211> 2040

<212> DNA

<213> Homo sapien

<400> 375

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<210> 376

<211> 329

<212> PRT

<213> Homo sapien

<400> 376

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Glu Tyr Thr Ile Val His Ala Ser Phe Ile Ser Cys Ile Ser Ser Ser
35     40     45
Leu Asp Gly Gln Gly Glu Arg Gln Glu Gln Arg Gly His Phe Trp Arg
50     55     60
Pro Gln Arg Leu Leu Cys Glu Asp Ala Trp Glu Gln Glu Val Gln Val
65     70     75     80
Val Leu Pro Leu Leu Pro Leu Leu Gln Gly Ser Gly Lys Ser Asn Val
85     90     95
Val Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr
100    105    110
His Val His Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp
115    120    125
Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
130    135    140
Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser
145    150    155    160
Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
165    170    175
Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
180    185    190
Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
195    200    205
Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr
210    215    220
Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr
225    230    235    240
Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu
245    250    255
Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys
260    265    270
Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu
275    280    285
Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu

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290 295 300
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 305 310 315 320
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<210> 377
 <211> 148
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...(148)
 <223> Xaa = Any Amino Acid

<400> 377
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 35 40 45
 Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu
 50 55 60
 Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp
 65 70 75 80
 Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp
 85 90 95
 Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro
 100 105 110
 Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp
 115 120 125
 Lys Leu Met Ala Lys Ala Leu Leu Tyr Gly Ala Asp Ile Glu Ser
 130 135 140
 Lys Asn Lys Val
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<210> 378
 <211> 1719
 <212> PRT
 <213> Homo sapien

<400> 378
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 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
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 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn

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 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
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 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
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 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
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 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
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 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Asn Val Ser Arg Thr Arg Asn Lys
 370 375 380
 Pro Arg Thr His Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser
 385 390 395 400
 Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys
 405 410 415
 Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly
 420 425 430
 Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys
 435 440 445
 Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly
 450 455 460
 Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys
 465 470 475 480
 Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys
 485 490 495
 Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp
 500 505 510
 Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu
 515 520 525

Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp
 530 535 540
 Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln
 545 550 555 560
 Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val
 565 570 575
 Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn
 580 585 590
 Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu
 595 600 605
 Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp
 610 615 620
 Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys
 625 630 635 640
 Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys
 645 650 655
 Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys
 660 665 670
 Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala
 675 680 685
 Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly
 690 695 700
 Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser
 705 710 715 720
 Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser
 725 730 735
 His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln
 740 745 750
 Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys
 755 760 765
 Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser
 770 775 780
 Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp
 785 790 795 800
 Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly
 805 810 815
 Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn
 820 825 830
 Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe
 835 840 845
 Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser
 850 855 860
 Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn
 865 870 875 880
 Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu
 885 890 895
 Glu Gly Ser Glu Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile
 900 905 910
 Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn
 915 920 925
 Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro
 930 935 940
 Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu
 945 950 955 960
 Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe

	965		970		975
Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His					
	980		985		990
Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser					
	995		1000		1005
Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu					
	1010		1015		1020
Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His					
	1025		1030		1035
Gln Ser Gln Leu Pro Arg Thr His Met Val Val Glu Val Asp Ser Met					
	1045		1050		1055
Pro Ala Ala Ser Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met					
	1060		1065		1070
Gly Lys Trp Cys Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys					
	1075		1080		1085
Ser Asn Val Gly Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr					
	1090		1095		1100
Leu Arg Ser Lys Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys					
	1105		1110		1115
Arg Gly Ser Gly Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp					
	1125		1130		1135
Ser Ala Met Lys Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His					
	1140		1145		1150
Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp					
	1155		1160		1165
Gly Asp Tyr Asp Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg					
	1170		1175		1180
Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val					
	1185		1190		1195
Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys					
	1205		1210		1215
Lys Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly					
	1220		1225		1230
Asn Ser Glu Val Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn					
	1235		1240		1245
Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys					
	1250		1255		1260
Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro					
	1265		1270		1275
Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr					
	1285		1290		1295
Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp					
	1300		1305		1310
Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val					
	1315		1320		1325
His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala					
	1330		1335		1340
Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala					
	1345		1350		1355
Val Cys Cys Gly Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn					
	1365		1370		1375
Ile Asp Val Ser Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr					
	1380		1385		1390
Ala Val Ser Ser His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr					
	1395		1400		1405

Lys Glu Lys Gln Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu
 1410 1415 1420
 Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly
 1425 1430 1435 144
 Ser Glu Asn Ser Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn
 1445 1450 1455
 Lys Asp Gly Asp Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser
 1460 1465 1470
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
 1475 1480 1485
 Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu
 1490 1495 1500
 Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys
 1505 1510 1515 152
 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
 1525 1530 1535
 Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu
 1540 1545 1550
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Gly Gln Pro Glu Lys Arg Ser
 1555 1560 1565
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
 1570 1575 1580
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
 1585 1590 1595 160
 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
 1605 1610 1615
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
 1620 1625 1630
 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
 1635 1640 1645
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
 1650 1655 1660
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
 1665 1670 1675 168
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
 1685 1690 1695
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
 1700 1705 1710
 Met Lys His Gln Ser Gln Leu
 1715

<210> 379

<211> 656

<212> PRT

<213> Homo sapien

<400> 379

Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
 1 5 10 15
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60

Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu

500 505 510
 Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys
 515 520 525
 Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly
 530 535 540
 Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser
 545 550 555 560
 Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr
 565 570 575
 His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln
 580 585 590
 Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln
 595 600 605
 Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys
 610 615 620
 Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile
 625 630 635 640
 Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu
 645 650 655

<210> 380

<211> 671

<212> PRT

<213> Homo sapien

<400> 380

Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
 1 5 10 15
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn

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225                230                235                240
Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
                245                250                255
Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
                260                265                270
Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
                275                280                285
Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
                290                295                300
Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
305                310                315                320
Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
                325                330                335
Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
                340                345                350
Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
                355                360                365
Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
                370                375                380
Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
385                390                395                400
Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
                405                410                415
Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
                420                425                430
Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
                435                440                445
Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
450                455                460
Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
465                470                475                480
Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
                485                490                495
Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu
                500                505                510
Asn Gly Gln Pro Glu Lys Arg Ser Gln Glu Pro Glu Ile Asn Lys Asp
                515                520                525
Gly Asp Arg Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys Lys
530                535                540
His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly Ala
545                550                555                560
Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser Arg
                565                570                575
Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr His
                580                585                590
Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln Asn
                595                600                605
Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln Ile
610                615                620
Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys Lys
625                630                635                640
Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile Ala
                645                650                655
Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu
                660                665                670

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<210> 381
<211> 251
<212> DNA
<213> Homo sapien

<400> 381

ggagaagcgt	ctgctggggc	aggaaggggt	ttccctgccc	tctcacctgt	ccctcaccaa	60
ggtaacatgc	ttcccctaag	ggtatcccaa	cccaggggcc	tcaccatgac	ctctgagggg	120
ccaatatccc	aggagaagca	ttggggagtt	gggggcaggt	gaaggaccca	ggactcacac	180
atcctgggccc	tccaaggcag	aggagagggg	cctcaagaag	gtcaggagga	aaatccgtaa	240
caagcagtc	a g					251

<210> 382
<211> 3279
<212> DNA
<213> Homo sapiens

<400> 382

cttcctgcag	cccccatgct	ggtgaggggc	acgggcagga	acagtggacc	caacatggaa	60
atgctggagg	gtgtcaggaa	gtgatcgggc	tctggggcag	ggaggagggg	tggggagtgt	120
cactgggagg	ggacatcctg	cagaaggtag	gagtgcagca	acacccgctg	caggggaggg	180
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cagggcgcg	gatggcctca	cacagggaag	agagggcccc	tctgcaggg	cctcacctgg	360
gccacaggag	gacactgctt	ttcctctgag	gagtcaggag	ctgtgtaggg	tgctggacag	420
aagaaggaaca	agggcctggct	caggtgtcca	gaggctgtcg	ctggcttccc	tttgggatca	480
gactgcaggg	agggagggcg	gcagggttgt	ggggggagtg	acgatgagga	tgacctgggg	540
gtggctccag	gccttgcccc	tgctggggc	ctcaccagc	ctccctcaca	gtctcctggc	600
cctcagtcct	tccctccac	tccatcctcc	atctggcctc	agtgggtcat	tctgatcact	660
gaactgacca	taccagccc	tgcccacggc	cctccatggc	tccccaatgc	cctggagagg	720
ggacatctag	tcagagagta	gtcctgaaga	ggtggcctct	gcgatgtgcc	tgtgggggca	780
gcacctcgca	gatggctccc	gccctcatcc	tgctgacctg	tctgcaggga	ctgtcctcct	840
ggaccttgcc	ccttggtgcag	gagctggacc	ctgaagtccc	ctcccatag	gccaaactg	900
gagccttggt	ccctctgttg	gactccctgc	ccatattctt	gtgggagtgg	gttctggaga	960
catttctgtc	tgttctgag	agctgggaat	tgctctcagt	catctgcctg	cgcggttctg	1020
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ttacccttag	ggtgattctg	ggggtccact	tgtctgtaat	ggtgtgcttc	aaggtatcac	1140
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gcattaccgg	aagtggatca	aggacacat	cgcagccaac	ccctgagtgc	ccctgtccca	1260
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caaggtggac	actctctaca	gatcactgag	gataagctgg	agccacaatg	catgaggcac	1680
acacacagca	aggttgacgc	tgtaaacata	gcccacgctg	tcctgggggg	actgggaagc	1740
ctagataaag	ccgtgagcag	aaagaagggg	aggatcctcc	tatgttggtg	aaggagggac	1800
tagggggaga	aactgaaagc	tgattaatta	caggaggttt	gttcagggtcc	cccaaaccac	1860
cgtcagattt	gatgatttcc	tagcaggact	tacagaaata	aagagctatc	atgctgtggt	1920
ttattatggt	ttgttacatt	gataggatac	atactgaaat	cagcaaacaa	aacagatgta	1980
tagattagag	tgtggagaaa	acagaggaaa	acttgacgtt	acgaagactg	gcaacttggc	2040
tttactaagt	tttcagactg	gcaggaagtc	aaacctatta	ggctgaggac	cttgtggagt	2100
gtagctgatc	cagctgatag	aggaactagc	caggtggggg	cctttccctt	tggatggggg	2160

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gcatatccga cagttattct ctccaagtgg agacttacgg acagcatata attctccctg 2220
caaggatgta tgataatatg tacaaagtaa ttccaactga ggaagctcac ctgaccccta 2280
gtgtccaggg tttttactgg gggctctgtg gacgagtatg gactacttga ataattgacc 2340
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ggcccaaggc cccaagtata tcaaggcact tgggcagaac atgccaagga atcaaagtgc 2520
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gttatgaaga tggttgaaca cccacacat agcaccggag atatgagatc aacagtttct 2880
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acaagacggt ggggcaaact ctgatttccg tgggggaatg tcatgggtctt gctttactaa 3060
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cccagctgat agaggaagta gccaggtggg agcctttccc agtgggtgtg ggacatatct 3180
ggcaagattt tgtggcactc ctggttacag atactggggc agcaaataaa actgaatctt 3240
gttttcagac cttaaaaaaa aaaaaaaaaa aaaagtttt 3279

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<210> 383

<211> 155

<212> PRT

<213> Homo sapiens

<400> 383

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Met Ala Gly Val Arg Asp Gln Gly Gln Gly Ala Arg Trp Pro His Thr
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Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
      20                      25                      30

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
      35                      40                      45

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
      50                      55                      60

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
      65                      70                      75                      80

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala
      85                      90                      95

Trp Ala Leu Thr Gln Pro Pro Ser Gln Ser Pro Gly Pro Gln Ser Leu
      100                     105                     110

Pro Ser Thr Pro Ser Ser Ile Trp Pro Gln Trp Val Ile Leu Ile Thr
      115                     120                     125

Glu Leu Thr Ile Pro Ser Pro Ala His Gly Pro Pro Trp Leu Pro Asn
      130                     135                     140

Ala Leu Glu Arg Gly His Leu Val Arg Glu
      145                     150

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<210> 384
<211> 557
<212> DNA
<213> Homo sapiens

<400> 384
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ggggaagggt cccttttgca ttgccaaagt ccataaccat gagcactact ctaccatggg 180
tctgcctcct ggccaagcag gctggtttgc aagaatgaaa tgaatgattc tacagctagg 240
acttaacctt gaaatggaaa gtcttgcaat cccatttgca ggatccgtct gtgcacatgc 300
ctctgtagag agcagcattc ccagggacct tggaaacagt tggcactgta aggtgcttgc 360
tccccaaagac acatcctaaa aggtgttgta atggtgaaaa cgtcttcctt ctttattgcc 420
ccttcttatt tatgtgaaca actgtttgtc tttttttgta tcttttttaa actgtaaaagt 480
tcaattgtga aaatgaatat catgcaaata aattatgcga ttttttttcc aaagtaaaaa 540
aaaaaaaaaa aaaaaaa 557

<210> 385
<211> 337
<212> DNA
<213> Homo sapiens

<400> 385
ttcccgagtg atgtgcgagg gaagacacat ttactatcct tgatggggct gatcccttca 60
gtttctctag cagcagatgg gttaggagga agtgacccaa gtggttgact cctatgtgca 120
tctcaaagcc atctgctgtc ttcgagtacg gacacatcat cactcctgca ttgttgatca 180
aaacgtggag gtgcttttcc tcagctaaga agcccttagc aaaagctcga atagacttag 240
tatcagacag gtccagtttc cgcaccaaca cctgctgggt ccctgtcgtg gtctggatct 300
ctttggccac caattcccc tttccacat cccggca 337

<210> 386
<211> 300
<212> DNA
<213> Homo sapiens

<400> 386
gggcccgcga ccggcccagg cccgcctcg cgagtcctcc tccccgggtg cctgcccgcga 60
gcccgtctcg cccagagggg gggcgcgggg ctgcctctac cggctggcgg ctgtaactca 120
gcgaccttgg cccgaaggct cttagcaagga cccaccgacc ccagccgcgg cggcggcggc 180
gcggaacttg cccggtgtgt ggggcggagc ggactgcgtg tccgcggacg ggcagcgaag 240
atgttagcct tcgctgccag gaccgtggac cgatcccagg gctgtggtgt aacctcagcc 300

<210> 387
<211> 537
<212> DNA
<213> Homo sapiens

<400> 387
gggcccagtc gggcaccaag ggactctttg caggcttcct tcctcggatc atcaaggctg 60
ccccctcctg tgccatcatg atcagcacct atgagttcgg caaaagcttc ttccagaggc 120
tgaaccagga ccggttctg ggcggctgaa aggggcaagg aggcaaggac cccgtctctc 180
ccacggatgg ggagagggca ggaggagacc cagccaagtg ctttttcctc agcactgagg 240
gaggggggctt gtttcccttc cctcccggcg acaagctcca gggcagggct gtccctctgg 300

gcggcccagc acttcctcag acacaacttc ttcctgctgc tccagtcgtg gggatcatca 360
 cttaccacc ccccaagttc aagaccaa at cttccagctg ccccttcgt gtttcctgt 420
 gtttgctgta gctgggcatg tctccaggaa ccaagaagcc ctcagcctgg ttagtctcc 480
 ctgacccttg ttaattcctt aagtctaaag atgatgaact tcaaaaaaaaa aaaaaa 537

<210> 388

<211> 520

<212> DNA

<213> Homo sapiens

<400> 388

aggataat ttaaaccaat caaatgaaaa aaacaaacaa acaaaaaagg aaatgtcatg 60
 tgagggttaa ccagtttgca tccccctaat gtggaaaaag taagaggact actcagcact 120
 gtttgagat tgctcttct acagcttctg agaattgtgt tatttcactt gccaagtga 180
 ggacccccct cccaacatgc cccagccac ccctaagcat ggtcccttgt caccaggcaa 240
 ccaggaaact gctacttgt gacctacca gagaccagga gggtttggtt agctcacagg 300
 acttccccca cccagaaga ttagcatccc atactagact cataactcaac tcaactaggc 360
 tcatactcaa ttgatggta ttagacaatt ccatttcttt ctggttatta taaacagaaa 420
 atcttctctc ttctcattac cagtaaaggc tcttggtatc tttctgttgg aatgatttct 480
 atgaacttgt cttattttaa tgggtgggtt ttttctggt 520

<210> 389

<211> 365

<212> DNA

<213> Homo sapiens

<400> 389

cggtgcccc gtttgacaga aggaaaggcg gagcttattc aaagtctaga gggagtggag 60
 gagttaaggc tggatttcag atctgcctgg ttccagccgc agtggtgccct ctgctcccc 120
 aacgactttc caaataatct caccagcgcc ttccagctca ggcgtcctag aagcgtcttg 180
 aagcctatgg ccagctgtct ttgtgttccc tctacccgc ctgtcctcac agctgagact 240
 cccaggaaac cttcagacta ctttctctct cttcagcaa ggggcgttgc ccacattctc 300
 tgagggtcag tggaagaacc tagactccca ttgctagagg tagaaagggg aagggtgctg 360
 gggag 365

<210> 390

<211> 221

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(221)

<223> n = A,T,C or G

<400> 390

tgctctcca tcttgcccc gacttctctg tcaggaaagt ggggatggac cccatctgca 60
 tacacgntt ctcatgggtg tggaacatct ctgcttgccg ttccaggaag gcctctggct 120
 gctctangag tctgancga ntcgttgccc cantntgaca naaggaaagg cggagcttat 180
 tcaaagtcta gagggagtgg aggagttaag gctggatttc a 221

<210> 391

<211> 325

<212> DNA

<213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(325)
 <223> n = A,T,C or G

<400> 391
 tggagcaggt cccgaggcct ccctagagcc tggggccgac tctgtgncga tgcangcttt 60
 ctctcgcgcc cagcctggag ctgctcctgg catctaccaa caatcagncg aggcgagcag 120
 tagccagggc actgctgccca acagccagtc cnnataccat catgtnaccc ggtgngctct 180
 naanttingat ntccanagcc ctacccatcn tagttctgct ctcccaccgg ntaccagccc 240
 cactgcccag gaatcctaca gccagtaccc tgtcccgcag tctctaccta ccagtacgat 300
 gagacctccg gctactacta tgacc 325

<210> 392
 <211> 277
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(277)
 <223> n = A,T,C or G

<400> 392
 atattgttta actccttctt ttatatcttt taacattttc atggngaaaag gttcacatct 60
 agtctcactt nggenagnn ctcctacttg agtctcttcc cggcctggn ccagtngnaa 120
 antaccanga accgncatgn cttaanaacn ncctgggttn tgggttnntc aatgactgca 180
 tgcagtgcac caccctgtcc actacgtgat gctgtaggat taaagtctca cagtgggcgg 240
 ctgaggatac agcgcgcgt cctgtgttgc tggggaa 277

<210> 393
 <211> 566
 <212> DNA
 <213> Homo sapiens

<400> 393
 actagtcag tgtgggtggaa ttcgcggccg cgtcgacgga caggtcagct gtctggctca 60
 gtgatctaca ttctgaagtt gtctgaaaat gtcttcatga ttaaattcag cctaaacgtt 120
 ttgccgggaa cactgcagag acaatgctgt gagtttccaa ccttagccca tctgcgggca 180
 gagaaggctc agtttgtcca tcagcattat catgatata ggactggta cttgggttaag 240
 gaggggtcta ggagatctgt cccttttaga gacaccttac ttataatgaa gtatttggga 300
 ggggtggttt caaaagtaga aatgtcctgt attccgatga tcatcctgta aacattttat 360
 catttattaa tcatccctgc ctgtgtctat tattatattc atatctctac gctggaaact 420
 ttctgcctca atgtttactg tgcctttgtt tttgctagtt tgtgttgttg aaaaaaaaaa 480
 cattctctgc ctgagtttta attttgtcc aaagttattt taatctatac aattaaaagc 540
 ttttgcctat caaaaaaaaa aaaaaa 566

<210> 394
 <211> 384
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature

<222> (1)...(384)

<223> n = A,T,C or G

<400> 394

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gaacatacat gtcccggcac ctgagctgca gtctgacatc atcgccatca cgggcctcgc 60
tgcaaattng gaccgggcca aggctggact gctggagcgt gtgaaggagc tacaggccna 120
gcaggaggac cgggctttta ggagttttta gctgagtgtc actgtagacc ccaaatacca 180
tcccaagatt atcggggagaa agggggcagt aattacccaa atccggttgg agcatgacgt 240
gaacatccag tttcctgata aggacgatgg gaaccagccc caggaccaa ttaccatcac 300
aggggtacgaa aagaacacag aagctgccag ggatgctata ctgagaattg tgggtgaact 360
tgagcagatg gtttctgagg acgt                                     384
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<210> 395

<211> 399

<212> DNA

<213> Homo sapiens

<400> 395

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ggcaaaactg tgtgacctca ataagacctc gcagatccaa ggtcaagtat cagaagtgc 60
tctgaccttg gactccaaga cctacatcaa cagcctggct atattagatg atgagccagt 120
tatcagaggt ttcattcattg cggaaattgt ggagtctaag gaaatcatgg cctctgaagt 180
attcagctct ttcagtagc ctgagttctc tatagagttg cctaacacag gcagaattgg 240
ccagctactt gtctgcaatt gtatcttcaa gaataccctg gccatccctt tgactgacgt 300
caagttctct ttggaaagcc tgggcatctc ctactacag acctctgacc atgggacggg 360
gcagcctggt gagaccatcc aatcccaaat aaaatgcac                                     399
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<210> 396

<211> 403

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(403)

<223> n = A,T,C or G

<400> 396

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tggagttntc agtgcaaaca agccataaag cttcagtagc aaattactgt ctcacagaaa 60
gacattttca acttctgctc cagctgctga taaaacaaat catgtgttta gcttgactcc 120
agacaaggac aacctgttcc ttcataactc tctagagaaa aaaaggagtt gttagtagat 180
actaaaaaaaa gtggatgaat aatctggata ttttccctaa aaagattcct tgaaacacat 240
taggaaaatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctgaagcagg 300
gttttagggga gggagtgagg gataaaaagaa ggaaaaaaag aagagtgaga aaacctatct 360
atcaaagcag gtgctatcac tcaatgttag gccctgctct ttt                                     403
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<210> 397

<211> 100

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(100)

<223> n = A,T,C or G

<400> 397

actagtncag tgtggtggaa ttcgcggccg cgtcgacctt naanccatct ctatagcaaa 60
tccatccccg ctcttggttg gtnacagaat gactgacaaa 100

<210> 398

<211> 278

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 398

gcggccgcgt cgacagcagt tccgccagcg ctgcgccctg ggtggggatg tgctgcacgc 60
ccacctggac atctggaagt cagcggcctg gatgaaagag cggacttcac ctggggcgat 120
tcactactgt gcctcgacca gtgaggagag ctggaccgac agcgaggtgg actcatcatg 180
ctccgggcag cccatccacc tgtggcagtt cctcaaggag ttgctactca agccccacag 240
ctatggccgc ttcattangt ggctcaacaa ggagaagg 278

<210> 399

<211> 298

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(298)

<223> n = A,T,C or G

<400> 399

acggaggtgg aggaagcgn cctgggatcg anaggatggg tcctgncatt gacnccctcn 60
gggggtgccng catggagcgc atggggcgcg gcctgggcca cggcatggat cgcgtgggct 120
ccgagatcga gcgcattggc ctgggtcatgg accgcatggg ctccgtggag cgcattgggct 180
ccggcattga gcgcattggc ccgctgggccc tcgaccacat ggccctccanc attgancgca 240
tggggccagac catggagcgc attgggtctg gcgtggagcn catgggtgcc ggcatggg 298

<210> 400

<211> 548

<212> DNA

<213> Homo sapiens

<400> 400

acatcaacta ctctctcatt ttaaggtatg gcagttccct tcatccccctt ttctgcctt 60
gtacatgtac atgtatgaaa ttctcttctc ttaccgaact ctctccacac atcacaaggt 120
caaagaacca cacgcttaga agggtaagag ggcaccctat gaaatgaaat ggtgatttct 180
tgagtctctt tttccacgt ttaaggggccc atggcaggac ttagagttgc gagttaagac 240
tgcagagggc tagagaatta tttcatacag gctttgaggc caccatgtc acttatcccc 300
tataccctct caccatcccc ttgtctactc tgatgcccc aagatgcaac tgggcagcta 360
gttggcccca taattctggg cttttgttgt ttgttttaat tacttgggca tcccaggaag 420
ctttccagtg atctctacc atgggcccc ctcttggttg caagccctc ccaggccctg 480
tccccagccc ctctgcccc agcccacccg cttgccttgg tgctcagccc tcccattggg 540
agcaggtt 548

<210> 401
<211> 355
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(355)
<223> n = A,T,C or G

<400> 401
actgtttcca tggtatgttt ctacacattg ctacctcagt gtcctggaa acttagcttt 60
tgatgtctcc aagtagtcca ccttcattta actctttgaa actgtatcat ctttgccaag 120
taagagtggg ggcctatttc agctgctttg acaaaatgac tggctcctga cttaacgttc 180
tataaatgaa tgtgctgaag caaagtgtcc atgggtggcg cgaagaagan aaagatgtgt 240
tttgttttgg actctctgtg gtcccttcca atgctgnggg tttccaacca ggggaagggt 300
cccttttgca ttgccaagtg ccataaccat gagcactact ctaccatggn tctgc 355

<210> 402
<211> 407
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(407)
<223> n = A,T,C or G

<400> 402
atggggcaag ctggataaag aaccaagacc cactggagta tgctgtcttc aagaaaccca 60
tctcacatgc ggtggcatat ataggctcaa aataaaggaa tggagaaaaa tttttcaagc 120
aaatggaaaa cagaaaaaag caggtgttgc actcctactt tctgacaaaa cagactatgc 180
gaataaagat aaaaaagaga aggacattac aaaggtggtc ctgacctttg ataaatctca 240
ttgcttgata ccaacctggg ctgttttaat tgcccaaacc aaaaggataa tttgctgagg 300
ttgtggagct tctcccttgc agagagtccc tgatctccca aaatttggtt gagatgtaag 360
gntgattttg ctgacaactc cttttctgaa gttttactca tttcaa 407

<210> 403
<211> 303
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(303)
<223> n = A,T,C or G

<400> 403
cagtatttat agcnaactg aaaagctagt agcaggcaag tctcaaattc aggcacaaaa 60
tcctaagcaa gagccatggc atggtgaaaa tgcaaaaggga gagtctggcc aatctacaaa 120
tagagaacaa gacctactca gtcataaaca aaaaggcaga caccaacatg gatctcatgg 180
gggattggat attgtaatta tagagcagga agatgacagt gatcgtcatt tggcacaaca 240
tcttaacaac gaccgaaacc cattattttac ataaacctcc attcggtaac catgttgaaa 300
gga 303

<210> 404
 <211> 225
 <212> DNA
 <213> Homo sapiens

<400> 404
 aagtgttaact tttaaaaatt tagtggattt tgaaaattct tagaggaaaag taaaggaaaa 60
 attgttaatg cactcattta cctttacatg gtgaaagttc tctcttgatc ctacaaacag 120
 acattttcca ctctgttttc catagtgtt aagtgtatca gatgtgttgg gcatgtgaat 180
 ctccaagtgc ctgtgtaata aataaagtat ctttatttca ttcac 225

<210> 405
 <211> 334
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(334)
 <223> n = A,T,C or G

<400> 405
 gagctgttat actgtgagtt ctactaggaa atcatcaaact ctgaggggtg tctggaggac 60
 ttcaatacac ctccccccat agtgaatcag cttccagggg gtccagtcct tctccttact 120
 tcatcccatc cccatgccaa aggaagaccc tccctccttg gctcacagcc ttctctaggc 180
 ttccccagtc cttcaggaca gagtgggtta tgttttcagc tccatccttg ctgtgagtgt 240
 ctggtgcggt tgtgcctcca gcttctgctc agtgcttcat ggacagtgtc cagcccatgt 300
 cactctccac tctctcanng tggatcccac ccct 334

<210> 406
 <211> 216
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(216)
 <223> n = A,T,C or G

<400> 406
 tttcatacct aatgagggag ttganatnac atnnaaccag gaaatgcatg gatctcaang 60
 gaaacaaaca cccaataaac tcggagtggc agactgacaa ctgtgagaca tgcacttgct 120
 acnaaacaca aatttnatgt tgcacccttg tttctacacc tgtgggttat gacaaagaca 180
 actgccaaag aatnttcaag aaggaggact gccant 216

<210> 407
 <211> 413
 <212> DNA
 <213> Homo sapiens

<400> 407
 gctgacttgc tagtatcacc tgcattcatt gaagcacaag aacttcatgc cttgactcat 60
 gtaaagtcaa taggattaaa aaataaattt gatatcacat ggaaacagac aaaaaatatt 120
 gtacaacatt gcacccagtg tcagattcta cacctggcca ctgaggaagc aagagttaat 180
 cccagaggtc tatgtcctaa tgtgttatgg caaatggatg tcatgcacgt accttcattt 240

ggaaaattgt catttgtcca tgtgacagtt gatacttatt cacatttcat atgggcaacc 300
tgccagacag gagaaagtct tcccatgtta aaagacattt attatcttgt ttctctgtca 360
tgggagttcc agaaaaagtt aaaacagaca atgggccagg ttctgtagta aag 413

<210> 408

<211> 183

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(183)

<223> n = A,T,C or G

<400> 408

ggagctngcc ctcaattcct ccatntctat gttancatat ttaatgtctt ttgnnattaa 60
tncttaacta gttaatcctt aaagggctan ntaatcctta actagtcctt ccattgtgag 120
cattatcctt ccagtattcn ccttctnttt tatttactcc ttcttggtta cccatgtact 180
ntt 183

<210> 409

<211> 250

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(250)

<223> n = A,T,C or G

<400> 409

cccacgcatg ataagctctt tatttctgta agtcctgcta ggaaatcatc aaatctgacg 60
gtgggttggg ggacctgaac aaacctcctg taattaatca gctttcagtt tctcccccta 120
gtccctcctt caacaacata ggaggatcct ccccttcttt ctgtcacgg ccttatctag 180
gcttcccagt gccccagga cagcgtgggc tatgtttaca gcgntcctt gctggggggg 240
ggccntatgc 250

<210> 410

<211> 306

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(306)

<223> n = A,T,C or G

<400> 410

ggctgggttg caagaatgaa atgaatgatt ctacagctag gacttaacct tgaaatggaa 60
agtcttgcaa tccatttgc aggatccgtc tgtgcacatg cctctgtaga gagcagcatt 120
cccagggacc ttggaaacag ttggcactgt aaggtgcttg ctcccccaaga cacatcctaa 180
aaggtggttg aatggtgaaa accgcttctt tctttattgc cccttcttat ttatgtgaac 240
nactgggttg ctttttttgn atctttttta aactggaaag ttcaattgng aaaatgaata 300
tcntgc 306

<210> 411
<211> 261
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(261)
<223> n = A,T,C or G

<400> 411
agagatattt cttaggtnaa agttcataga gttcccatga actatatgac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
tttaaagtgc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtggggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
cttctctcaa ggngaggcaa a 261

<210> 412
<211> 241
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(241)
<223> n = A,T,C or G

<400> 412
gttcaatggt acctgacatt tctacaacac cccactcacc gatgtattcg ttgccagtg 60
ggaacatacc agcctgaatt tggaaaaaat aattgtgttt cttgccagg aaatactacg 120
actgactttg atggctccac aaacataacc cagtgtaaaa acagaagatg tggaggggag 180
ctgggagatt tctctgggta cattgaattc ccaaactacc cangcaatta cccagccaac 240
a 241

<210> 413
<211> 231
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(231)
<223> n = A,T,C or G

<400> 413
aactcttaca atccaagtga ctcatctgtg tgcttgaatc ctttccactg tctcatctcc 60
ctcatccaag tttctagtac cttctctttg ttgtgaagga taatcaaact gaacaacaaa 120
aagtttactc tctctatttg gaacctaaaa actctcttct tcttgggtct gagggctcca 180
agaatccttg aatcanttct cagatcattg gggacaccan atcaggaacc t 231

<210> 414
<211> 234
<212> DNA
<213> Homo sapiens

<400> 414
actgtccatg aagcactgag cagaagctgg aggcacaacg caccagacac tcacagcaag 60
gatggagctg aaaacataac ccactctgtc ctggaggcac tgggaagcct agagaaggct 120
gtgagccaag gagggagggt cttccttttg catgggatgg ggatgaagta aggagaggga 180
ctggaccccc tggaagctga ttcactatgg ggggaggtgt attgaagtcc tcca 234

<210> 415
<211> 217
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(217)
<223> n = A,T,C or G

<400> 415
gcataggatt aagactgagt atcttttcta cattctttta acttttctaag gggcacttct 60
caaaacacag accaggtagc aaatctccac tgctctaagg ntctcaccac cactttctca 120
cacctagcaa tagtagaatt cagtcctact tctgaggcca gaagaatggt tcagaaaaat 180
antggattat aaaaaataac aattaagaaa aataatc 217

<210> 416
<211> 213
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(213)
<223> n = A,T,C or G

<400> 416
atgcatatnt aaagganact gcctcgcttt tagaagacat ctggnctgct ctctgcatga 60
ggcacagcag taaagctctt tgattccag aatcaagaac tctcccttc agactattac 120
cgaatgcaag gtggttaatt gaaggccact aattgatgct caaatagaag gatattgact 180
atattggaac agatggagtc tctactacaa aag 213

<210> 417
<211> 303
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(303)
<223> n = A,T,C or G

<400> 417
nagtcttcag gcccatcagg gaagttcaca ctggagagaa gtcatacata tgtactgtat 60
gtgggaaagg ctttactctg agttcaaate ttcaagccca tcagagagtc cacactggag 120
agaagccata caaatgcaat gagtgtggga agagcttcag gagggattcc cattatcaag 180
ttcatctagt ggtccacaca ggagagaaac cctataaatg tgagatatgt gggaagggt 240
tcantcaaag ttcgtatctt caaatccatc ngaaggncca cagtatanan aaacctttta 300
agt 303

<210> 418
<211> 328
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

<400> 418
tttttggcgg tgggtggggca gggacgggac angagtctca ctctgttgcc caggctggag 60
tgcacaggca tgatctcggc tcaactacaac ccctgcctcc catgtccaag cgattcttgt 120
gcctcagcct tcctgttagc tagaattaca ggcacatgcc accacaccca gctagttttt 180
gtatttttag tagagacagg gtttcacat gttggccagg ctggtctcaa actcctnacc 240
tcagnngtca ggctggtctc aaactcctga cctcaagtga tctgcccacc tcagcctccc 300
aaagtgctan gattacaggc cgtgagcc 328

<210> 419
<211> 389
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(389)
<223> n = A,T,C or G

<400> 419
cctcctcaag acggcctgtg gtccgcctcc cggcaaccaa gaagcctgca gtgccatattg 60
acccctgagc catggactgg agcctgaaag gcagcgtaca ccctgctcct gatcttgctg 120
cttggttctt ctctgtggct ccattcatag cacagtgtgt gcactgaggc ttgtgcaggc 180
cgagcaaggc caagctggct caaagagcaa ccagtcaact ctgccacggt gtgccaggca 240
ccggttctcc agccaccaac ctactcgtc cccgcaaatg gcacatcagt tcttctaccc 300
taaaggtagg accaaagggc atctgctttt ctgaagtcct ctgctctatc agccatcacg 360
tggcagccac tcnggctgtg tcgacgcgg 389

<210> 420
<211> 408
<212> DNA
<213> Homo sapiens

<400> 420
gttcctccta actcctgcc aaaaacagctc tcttcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttggttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg aagtgtctatg aaaaacctgg caagcccc 408

<210> 421
<211> 352
<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(352)

<223> n = A,T,C or G

<400> 421

```
gctcaaaaat ctttttactg atnggcatgg ctacacaatc attgactatt acggaggcca 60
gaggagaatg aggcctggcc tgggagccct gtgcctacta naagcacatt agattatcca 120
ttcactgaca gaacaggtct tttttgggtc cttcttctcc accacnata acttgacgtc 180
ctccttcttg aagattcttt ggcagttgtc tttgtcataa cccacaggtg tagaaacaag 240
ggtgcaacat gaaatttctg tttcgtagca agtgcattgc tcacaagttg gcangtctgc 300
cactccgagt ttattgggtg tttgtttcct ttgagatcca tgcatttcct gg 352
```

<210> 422

<211> 337

<212> DNA

<213> Homo sapiens

<400> 422

```
atgccaccat gctggcaatg cagcggggcg tccaaggcct gcatatccag cccaagctgg 60
cgatgatcga cggcaaccgt tgcccgaagt tgccgatgcc agccgaagcg gtggtcaagg 120
gcgatagcaa ggtgccggcg atcgcgggcg cgtcaatcct ggccaaggct agccgtgatc 180
gtgaaatggc agctgtcgaa ttgatctacc cgggttatgg catcgggcgg cataagggtc 240
atccgacacc ggtgcacctg gaagccttgc agcggctggg gccgacgccg attcaccgac 300
gcttcttccg ccggtacggc tggcctatga aaattat 337
```

<210> 423

<211> 310

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(310)

<223> n = A,T,C or G

<400> 423

```
gctcaaaaat ctttttactg atatggcatg gctacacaat cattgactat tagaggccag 60
aggagaatga ggcctggcct gggagccctg tgccctactan aagcncatta gattatccat 120
tcactgacag aacaggtctt ttttgggtcc ttcttctcca ccacgatata cttgcagtcc 180
tccttcttga agattctttg gcagttgtct ttgtcataac ccacaggtgt anaaacaagg 240
gtgcaacatg aaatttctgt ttcgtagcaa gtgcatgtct cacagttgtc aagtctgccc 300
tccgagttta 310
```

<210> 424

<211> 370

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(370)

<223> n = A,T,C or G

<400> 424

```

gctcaaaaat ctttttactg ataggcatgg ctacacaatc attgactatt agaggccaga 60
ggagaatgag gcctggcctg ggagccctgt gcctactaga agcacattag attatccatt 120
cactgacaga acaggctctt tttgggtcct tcttctccac cacgatatac ttgcagtcct 180
ctttcttgaa gattcttttg cagttgtctt tgtcataacc cacagggtga gaaacatcct 240
ggttgaatct cctggaactc cctcattagg tatgaaatag catgatgcat tgcataaagt 300
cacgaagggtg gcaaagatca caacgctgcc cagganaaca ttcattgtga taagcaggac 360
tccgtcgacg                                     370

```

<210> 425

<211> 216

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(216)

<223> n = A,T,C or G

<400> 425

```

aattgctatn ntttattttg ccactcaaaa taattaccaa aaaaaaaaaa tnttaaataga 60
taacaacnca acatcaagg n anaanaaca ggaatggntg acntngcata aatnggccga 120
anattatcca ttatnttaag ggttgacttc aggntacagc acacagacaa acatgcccag 180
gaggntntca ggaccgctcg atgtnttntg aggagg                                     216

```

<210> 426

<211> 596

<212> DNA

<213> Homo sapiens

<400> 426

```

cttccagtga ggataaccct gttgccccgg gccgagggttc tccattaggc tctgattgat 60
tggcagtcag tgatggaagg gtgttctgat cattccgact gccccaaggg tcgctggcca 120
gctctctgtt ttgctgagtt ggcagtagga cctaatttgt taattaagag tagatgggtga 180
gctgtccttg tattttgatt aacctaatgg ccttcccagc acgactcgga ttcagctgga 240
gacatcacgg caacttttaa tgaaatgatt tgaagggccca ttaagaggca cttcccgtta 300
ttaggcagtt catctgcact gataacttct tggcagctga gctggtcgga gctgtggccc 360
aaacgcacac ttggcttttg gttttgagat acaactctta atcttttagt catgcttgag 420
ggtggatggc cttttcagct ttaacccaat ttgactgcc ttggaagtgt agccaggaga 480
atacatcat atactcgtgg gcttagaggc cacagcagat gtcattggtc tactgcctga 540
gtcccgtggtg tcccatccca ggaccttcca tcggcgagta cctgggagcc cgtgct      596

```

<210> 427

<211> 107

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(107)

<223> n = A,T,C or G

<400> 427

```

gaagaattca agttaggttt attcaaaggg cttacngaga atcctanacc caggncccag 60

```

ccccgggagca gccttanaga gctcctgttt gactgcccgg ctcagng

107

<210> 428

<211> 38

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(38)

<223> n = A,T,C or G

<400> 428

gaacttcena anaangactt tattcactat ttacatt

38

<210> 429

<211> 544

<212> DNA

<213> Homo sapiens

<400> 429

ctttgctgga cgggaataaaa gtggacgcaa gcatgacctc ctgatgaggg cgctgcattt 60
 attgaagagc ggctgcagcc ctgcggttca gattaaaatc cgagaattgt atagacgccg 120
 atatccacga actcttgaag gactttctga tttatccaca atcaaatcat cggttttcag 180
 tttggatggg ggctcatcac ctgtagaacc tgacttggcc gtggctggaa tccactcgtt 240
 gccttcact tcagttacac ctcaactcacc atcctctcct gttgggttctg tgctgcttca 300
 agatactaag cccacatttg agatgcagca gcatctccc ccaattcctc ctgtccatcc 360
 tgatgtgcag ttaaaaaatc tggcctttta tgatgtcctt gatgttctca tcaagccac 420
 gagtttagtt caaagcagta ttcagcgatt tcaagagaag ttttttattt ttgctttgac 480
 acctcaacaa gttagagaga tatgcatatc cagggatttt ttgccagggtg gtaggagaga 540
 ttat 544

<210> 430

<211> 507

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(507)

<223> n = A,T,C or G

<400> 430

cttatcncaa tggggctccc aaacttggct gtgcagtgga aactccgggg gaattttgaa 60
 gaacactgac acccatcttc caccocgaca ctctgattta attgggctgc agtgagaaca 120
 gagcatcaat ttaaaaagct gcccagaatg ttntcctggg cagcgttggt atctttgccn 180
 ccttcgtgac tttatgcaat gcatcatgct atttcatacc taatgagggg gttccaggag 240
 attcaaccag gatgtttcta cncctgtggg ttatgacaaa gacaactgcc aaagaatntt 300
 caagaaggag gactgcaagt atatcgtggg ggagaagaag gacccaaaaa agacctgttc 360
 tgtcagtga tggataatct aatgtgcttc tagtaggcac agggctccca ggccaggcct 420
 cattctctc tggcctctaa tagtcaatga ttgtgtagcc atgcctatca gtaaaaagat 480
 ttttgagcaa aaaaaaaaaa aaaaaaa 507

<210> 431

<211> 392

<212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(392)
 <223> n = A,T,C or G

<400> 431
 gaaaattcag aatggataaa aacaaatgaa gtacaaaata tttcagattt acatagcgat 60
 aaacaagaaa gcacttatca ggaggactta caaatggaag tacactctan aaccatcatc 120
 tatcatggct aaatgtgaga ttagcacagc tgtattattt gtacattgca aacacctaga 180
 aagagatggg aaacaaaatc ccaggagttt tgtgtgtgga gtccctgggtt ttccaacaga 240
 catcattcca gcattctgag attagggnga ttggggatca ttctggagtt ggaatgttca 300
 acaaaagtga tgttgttagg taaaatgtac aacttctgga tctatgcaga cattgaaggt 360
 gcaatgagtc tggcttttac tctgctgttt ct 392

<210> 432
 <211> 387
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(387)
 <223> n = A,T,C or G

<400> 432
 ggtatccnta cataatcaaa tatagctgta gtacatgttt tcattggngt agattaccac 60
 aaatgcaagg caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg 120
 ngtagtccaa gctctcggna gtccagccac tngaaacat gctcccttta gattaacctc 180
 gtggacnctn ttgttgnatt gtctgaactg tagngccctg tattttgctt ctgtctgnga 240
 attctgttgc ttctggggca tttccttgng atgcagagga ccaccacaca gatgacagca 300
 atctgaattg ntccaatcac agctgcgatt aagacatact gaaatcgtac aggaccggga 360
 acaacgtata gaacactgga gtccttt 387

<210> 433
 <211> 281
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(281)
 <223> n = A,T,C or G

<400> 433
 ttcaactagc anagaanact gcttcagggg gtgtaaaatg aaaggcttcc acgcagttat 60
 ctgattaaag aacactaaga gagggacaag gctagaagcc gcaggatgtc tacactatag 120
 caggcnctat ttgggttggc tggaggagct gtggaaaaca tggagagatt ggcgctggag 180
 atcgccgtgg ctattcctcn ttgntattac accagngagg ntctctgtnt gccactgggt 240
 tnnaaaaccg ntatacaata atgatagaat aggacacaca t 281

<210> 434
 <211> 484

<212> DNA

<213> Homo sapiens

<400> 434

```

ttttaaaata agcatttagt gctcagtecc tactgagtac tctttctctc cctcctcttg 60
aatttaattc tttcaacttg caatttgcaa ggattacaca tttcactgtg atgtatattg 120
tggtgcaaaa aaaaaaaagt gtctttgttt aaaattactt ggtttgtgaa tccatcttgc 180
tttttcccca ttggaactag tcattaaccc atctctgaac tggtagaaaa acatctgaag 240
agctagtcta tcagcatctg acaggtgaat tggatgggtc tcagaacccat ttcaccaga 300
cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca taacaaaccc 360
tgctccaatc tgtcacataa aagtctgtga cttgaagttt agtcagcacc cccaccaaac 420
tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataaag taccatgtc 480
ttaa
484

```

<210> 435

<211> 424

<212> DNA

<213> Homo sapiens

<400> 435

```

gcgccgctca gagcaggtca ctttctgcct tccacgtcct ccttcaagga agcccatgt 60
gggtagcttt caatatcgca gggtcttact cctctgcctc tataagctca aaccaccaa 120
cgatcgggca agtaaacccc ctccctcgcc gacttcggaa ctggcgagag ttcagcgag 180
atgggcctgt ggggaggggg caagatagat gagggggagc ggcattgtgc ggggtgaccc 240
cttgagagaga ggaaaaaggc cacaagaggg gctgccaccg ccactaacgg agatggcct 300
ggtagagacc tttgggggtc tggaaacctc ggactcccca tgctctaact cccacactct 360
gctatcagaa acttaaacct gaggattttc tctgtttttc actcgcaata aattcagagc 420
aaac
424

```

<210> 436

<211> 667

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(667)

<223> n = A,T,C or G

<400> 436

```

accttgggaa nactctcaca atataaaggg tcgtagactt tactccaaat tccaaaaagg 60
tcttgcccat gtaatcctga aagttttccc aaggtagcta taaaatcctt ataaggggtg 120
agcctcttct ggaattcctc tgatttcaaa gtctcactct caagttcttg aaaacgaggg 180
cagttcctga aaggcaggta tagcaactga tcttcagaaa gaggaactgt gtgcaccggg 240
atgggctgcc agagtaggat aggattccag atgctgacac cttctggggg aaacaggggt 300
gccaggtttg tcatagcact catcaaagtc cggtaaacgt ctgtgcttcg aatataaacc 360
tgttcatgtt tataggactc attcaagaat tttctatc tctttcttat atactctcca 420
agttcataat gctgctccat gccagctgg gtgagttggc caaatccttg tggccatgag 480
gattccttta tggggtcagt gggaaagggt tcaatgggac ttcgggtctcc atgccgaaac 540
accaaagtca caaacttcaa ctcttgggt agtacacttc ggtctagcca gaaaaaaggc 600
agaaacaaga agccaaggct aaggcttgct gccctgccag gaggaggggt gcagctctca 660
tgttgag
667

```

<210> 437

<211> 693

<212> DNA

<213> Homo sapiens

<400> 437

```
ctacgtctca accctcattt ttaggtaagg aatcttaagt ccaaagatat taagtgactc 60
acacagccag gtaaggaaaag ctggattggc acactaggac tctaccatac cgggttttgt 120
taaagctcag gttaggaggc tgataagctt ggaagggaact tcagacagct ttttcagatc 180
ataaaaagata attcttagcc catgttcttc tccagagcag acctgaaatg acagcacagc 240
aggtagctct ctattttcac cctcttggct tctactctct ggcagtcaga cctgtgggag 300
gccatgggag aaagcagctc tctggatggt tgtacagatc atggactatt ctctgtggag 360
catttctcca gggtacccta ggtgtcacta ttgggggggac agccagcatc tttagctttc 420
atgtgagttt ctgtctgtct tcagtagagg aaacttttgc tcttcacact tcacatctga 480
acacctaact gctgttgctc ctgaggtggt gaaagacaga tatagagctt acagtattta 540
tcctatttct aggcactgag ggctgtgggg taccttgtgg tgccaaaaca gatcctgttt 600
taaggacatg ttgcttcaga gatgtctgta actatctggg ggctctgttg gctctttacc 660
ctgcatcatg tgctctcttg gctgaaaatg acc 693
```

<210> 438

<211> 360

<212> DNA

<213> Homo sapiens

<400> 438

```
ctgcttatca caatgaatgt tctcctgggc agcgttgtga tctttgccac cttcgtgact 60
ttatgcaatg catcatgcta tttcatacct aatgaggagg ttccaggaga ttcaaccagg 120
atgtttctac acctgtgggt tatgacaaag acaactgcc aagaatcttc aagaaggagg 180
actgcaagta tatctggtgg agaagaagga cccaaaaaag acctgttctg tcagtgaatg 240
gataatctaa tgtgcttcta gtaggcacag ggctcccagg ccaggccctca ttctcctctg 300
gcctctaata gtcaataatt gtgtagccat gcctatcagt aaaaagattt ttgagcaaac 360
```

<210> 439

<211> 431

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(431)

<223> n = A,T,C or G

<400> 439

```
gttcctnnta actcctgcc aaaaacagctc tcctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggtc tcttgtttct gcttttttct tggctagacc 120
gaagtgtact agccaaggag ttgaagtgtg tgacttttgt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcattggca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcggccgcg 420
aatttagtag t 431
```

<210> 440

<211> 523

<212> DNA

<213> Homo sapiens

<400> 440

```
agagataaag cttaggtcaa agttcataga gttcccatga actatatgac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
tttaaagtgc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
cttctctcaa ggagaggcaa agaaaggaga tacagtggag acatctggaa agttttctcc 300
actggaaaac tgctactatc tgtttttata tttctgttaa aatatatgag gctacagaac 360
taaaaattaa aacctctttg tgtcccttgg tcctggaaca tttatgttcc ttttaaagaa 420
acaaaaatca aactttacag aaagatttga tgtatgtaac acatatagca gctcttgaag 480
tatatatatc atagcaaata agtcacttga tgagaacaag cta 523
```

<210> 441

<211> 430

<212> DNA

<213> Homo sapiens

<400> 441

```
gttcctccta actcctgcc a gaaacagctc tctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgaccca taaaggaatc ctcatggcca caaggatttg 240
gccaaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attccttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcggccgcg 420
aatttagtag 430
```

<210> 442

<211> 362

<212> DNA

<213> Homo sapiens

<400> 442

```
ctaaggaatt agtagtggtc ccatcacttg tttggagtgt gctattctaa aagattttga 60
tttcctggaa tgacaattat attttaactt tgggtggggg aagagttata ggaccacagt 120
cttcacttct gatacttgta aattaatctt ttattgact tgttttgacc attaagctat 180
atgttttagaa atggtcattt tacggaaaaa tttagaaaaa tctgataata gtgcagaata 240
aatgaattaa tgttttactt aatttatatt gaactgtcaa tgacaaataa aaattctttt 300
tgattatttt ttgttttcat ttaccagaat aaaaactaag aattaaaagt ttgattacag 360
tc 362
```

<210> 443

<211> 624

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(624)

<223> n = A,T,C or G

<400> 443

```
tttttttttt gcaacacaat atacatcaca gtgaaatgtg taatccttgc aaattgcaag 60
ttgaaagaat taaattcaga ggagggggaga gaaagagtac tcagtaggga ctgagcacta 120
aatgcttatt ttaaaagaaa tgtaaagagc agaaagcaat tcaggctacc ctgccttttg 180
tgctggctag tactccggtc ggtgtcagca gcacgtggca ttgaacattg caatgtggag 240
```

```
cccaaaccac agaaaatggg gtgaaattgg ccaactttct attaacttgg ctccctgttt 300
tataaaatat tgtgaataat atcacctact tcaaagggca gttatgaggc ttaaataaac 360
taacgcctac aaaacactta aacatagata acataggtgc aagtactatg tatctggtac 420
atggtaaaca tccttattat taaagtcaac gctaaaatga atgtgtgtgc atatgctaata 480
agtacagaga gagggcactt aaaccaacta agggcctgga gggaagggtt cctggaaaga 540
ngatgcttgt gctgggtcca aatcttggtc tactatgacc ttggccaaat tatttaaact 600
ttgtccctat ctgctaaaca gatc 624
```

<210> 444

<211> 425

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(425)

<223> n = A,T,C or G

<400> 444

```
gcacatcatt nntcttgcatt tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60
gaagctttgt ccaggcctgt gtgtgaaccc aatgttttgc ttagaaatag aacaagtaag 120
ttcattgcta tagcataaca caaaatttgc ataagtggtg gtcagcaaat ccttgaatgc 180
tgcttaaatgt gagaggttgg taaaatcctt tgtgcaacac tctaactccc tgaatgtttt 240
gctgtgctgg gacctgtgca tgccagacaa ggccaagctg gctgaaagag caaccagcca 300
cctctgcaat ctgccacctc ctgctggcag gatttgtttt tgcatcctgt gaagagccaa 360
ggaggcacca gggcataagt gagtagactt atggtcgacg cggccgcgaa tttagtagta 420
gtaga 425
```

<210> 445

<211> 414

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 445

```
catgtttatg nttttggatt actttgggca cctagtgttt ctaaatecgtc tatcattctt 60
ttctgttttt caaaagcaga gatggccaga gtctcaacaa actgtatctt caagtctttg 120
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<210> 446

<211> 631

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(631)

<223> n = A,T,C or G

<400> 446

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atgctgggta tactggacaa cactgtgaaa aaaaggacta cagtgttcta tacgttggtc 180
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cagtattata gacaaaagaa taagacaaga gatctacaca tgttgcttg catttggtgt 540
aatctacacc aatgaaaaca tgtactacag ctatatgtga ttatgtatgg atatatttga 600
aatagtatac attgtcttga tgttttttct g                                     631

```

<210> 447

<211> 585

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(585)

<223> n = A,T,C or G

<400> 447

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cctggccatg taatcctgaa agttttccca aggtagctat aaaatcctta taaggggtgca 120
gcctcttctg gaattcctct gatttcaaag tctcactctc aagttcttga aaacgagggc 180
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ccagggtttgt catagcactc atcaaagtcc ggtcaacgtc tgtgcttcga atataaacct 360
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gttcataatg ctgctccatg cccagctggg tgagttggcc aaatccttgt ggccatgagg 480
attcctttat ggggtcagtg ggaaagggtg caatgggact tcggtctcca tgccgaaaca 540
ccaaagtcac aaacttcaac tccttggtga gtacacttcg gtcta                                     585

```

<210> 448

<211> 93

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(93)

<223> n = A,T,C or G

<400> 448

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tgctcgtggg tcattctgan ncccgaactg acctgccag ccctgccgan gggccnccat 60
ggctccctag tgccctggag agganggggc tag                                     93

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<210> 449

<211> 706

<212> DNA

<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(706)
<223> n = A,T,C or G

<400> 449
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ttctgancac cgaactgacc atgccagccc tgccgatggt cctccatggc tccctagtgc 120
cctggagagg aggtgtctag tcagagagta gtcctggaag gtggcctctg ngaggagcca 180
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cgtacgtaag cttggatcct ctagagcggc cgcctactac tactaaattc gcggccgcgt 480
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cactgagcag aagctggagg cacaacgcnc cagacactca cagctactca ggaggctgag 600
aacagggtga acctgggagg tggaggttgc aatgagctga gatcaggccn ctgcncacca 660
gcatggatga cagagtgaat ctccatctta aaaaaaaaaa aaaaaa 706

<210> 450
<211> 493
<212> DNA
<213> Homo sapiens

<400> 450
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aaatgaggct gagaacttta caaagggatc ttacagacat gtcgccaata tcaactgcatg 180
agcctaagta taagaacaac ctttggggag aaaccatcat ttgacagtga ggtacaattc 240
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tcaagtcaac acatctgtga actcacagac caagttctta aaccactgtt caaactctgc 420
tacacatcag aatcacctgg agagctttac aaactcccat tgccgagggc cgacgcggcc 480
gcgaatttag tag 493

<210> 451
<211> 501
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(501)
<223> n = A,T,C or G

<400> 451
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ctcttcgcta ttacgccagc tggcgaaagg gggatgtgct gcaaggcgat taagtgggt 120
aacgccaggg ttttcccagt cncgacgttg taaaacgacg gccagtgaat tgaatttagg 180
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cgcncagac actcacagct actcaggagg ctgagaacag gttgaacctg ggagggtggag 420
gttgcaatga gctgagatca ggcnctgcn ccccgagcat gatgacagag tgaaactcca 480

tcttaaaaaa aaaaaaaaaa a

501

<210> 452

<211> 51

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(51)

<223> n = A,T,C or G

<400> 452

agacgggtttc accnttataa cnccttttag gatgggnntt ggggagcaag c

51

<210> 453

<211> 317

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(317)

<223> n = A,T,C or G

<400> 453

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 ttcacccana cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca 180
 taacaaaccc tgctccaatc tgtcacataa aagtctgtga cttgaagttt antcagcacc 240
 cccaccaaac tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataagg 300
 taccatgtc tttatta 317

<210> 454

<211> 231

<212> DNA

<213> Homo sapiens

<400> 454

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 agaagaccaa attcttctgc atcccagctt gcaaacaaaa ttgttcttct aggtctccac 180
 ccttcctttt tcagtgttcc aaagctctc acaatttcat gaacaacagc t 231

<210> 455

<211> 231

<212> DNA

<213> Homo sapiens

<400> 455

taccaaagag ggcataataa tcagtctcac agtaggggtc accatcctcc aagtgaaaaa 60
 cattgttccg aatgggcttt ccacaggcta cacacacaaa acaggaaaca tgccaagttt 120
 gtttcaacgc attgatgact tctccaagga tcttcctttg gcacgacca cattcagggg 180
 caaagaattt ctcatagcac agctcacaat acagggtctc tttctcctct a 231

<210> 456
<211> 231
<212> DNA
<213> Homo sapiens

<400> 456
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ttccattcag tattatcggt attattcttg gagaaacct gtctgtttac tgtaaccttt 120
tgcactcaaa ttcctttatc aggaataact acatagccac tatttacaaa gccattggaa 180
cctttttatt tgggtgcagct gctagtcagt ccctgactga cattgccaag t 231

<210> 457
<211> 231
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(231)
<223> n = A,T,C or G

<400> 457
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gcattcctta atatgatctt gctataatta gatttttctc cattagagtt catacagttt 120
tatttgattt tattagcaat ctctttcaga agacccttga gatcattaag ctttgtatcc 180
agttgtctaa atcgatgctt catttcctct gaggtgtcgc tggcttttgc g 231

<210> 458
<211> 231
<212> DNA
<213> Homo sapiens

<400> 458
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agaagagggg tgggttaggga agccggttag acctgaagcc ccaccctcta ccttccttca 120
acaccctaac cttgggtaac agcatttgga attatcattt gggatgagta gaatttccaa 180
ggtcctgggt taggcatttt gggggggccag accccaggag aagaagattc t 231

<210> 459
<211> 231
<212> DNA
<213> Homo sapiens

<400> 459
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gccctgcact gttttccctc caccacagcc atcctgtccc tcattggctc tgtgctttcc 180
actatacaca gtcaccgtcc caatgagaaa caagaaggag caccctccac a 231

<210> 460
<211> 231
<212> DNA
<213> Homo sapiens

<400> 460

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cccacctccc cacacgcaca cggccagcct ggagcccaca gaagggtcct cctgcagcca 180
gtggagcttg gtccagcctc cagtccaccc ctaccaggct taaggataga a 231

<210> 461

<211> 231

<212> DNA

<213> Homo sapiens

<400> 461

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<210> 462

<211> 231

<212> DNA

<213> Homo sapiens

<400> 462

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gaagaactgt tagagagacc aacagggtag tgggttagag atttccagag tcttacattt 180
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<210> 463

<211> 231

<212> DNA

<213> Homo sapiens

<400> 463

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catttgacag gtgtcttttc ctctggacct cgggtgtccc atctgagtga gaaaaggcag 180
tggggaggtg gatcttccag tcgaagcggg atagaagccc gtgtgaaaag c 231

<210> 464

<211> 231

<212> DNA

<213> Homo sapiens

<400> 464

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cctgtctcag tgactgtgtg cctgtagtcc cagctactcg ggagtctgtg tgaggccagg 180
ggtgccagcg caccagctag atgctctgta acttctaggc cccattttcc c 231

<210> 465

<211> 231

<212> DNA

<213> Homo sapiens

<400> 465

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aggatggcac aatttttgct tgtgttcata atatactcag attagttcag ctccatcaga 180
taaactggag acatgcagga cattaggga gtgtttagc tctggtaatg a 231

<210> 466

<211> 231

<212> DNA

<213> Homo sapiens

<400> 466

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cctgtgcaat caaatattgt ggagaattcc ctagctggag aagtcacaaa gactataggc 180
aataatggag accagtccca caagatgaca accagtcgtt gtgtgcggt g 231

<210> 467

<211> 311

<212> DNA

<213> Homo sapiens

<400> 467

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<210> 468

<211> 3112

<212> DNA

<213> Homo sapiens

<400> 468

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<210> 469

<211> 2229

<212> DNA

<213> Homo sapiens

<400> 469

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<211> 2426

<212> DNA

<213> Homo sapiens

<400> 470

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2426

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<211> 812

<212> DNA

<213> Homo sapiens

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812

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<211> 515

<212> DNA

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<220>

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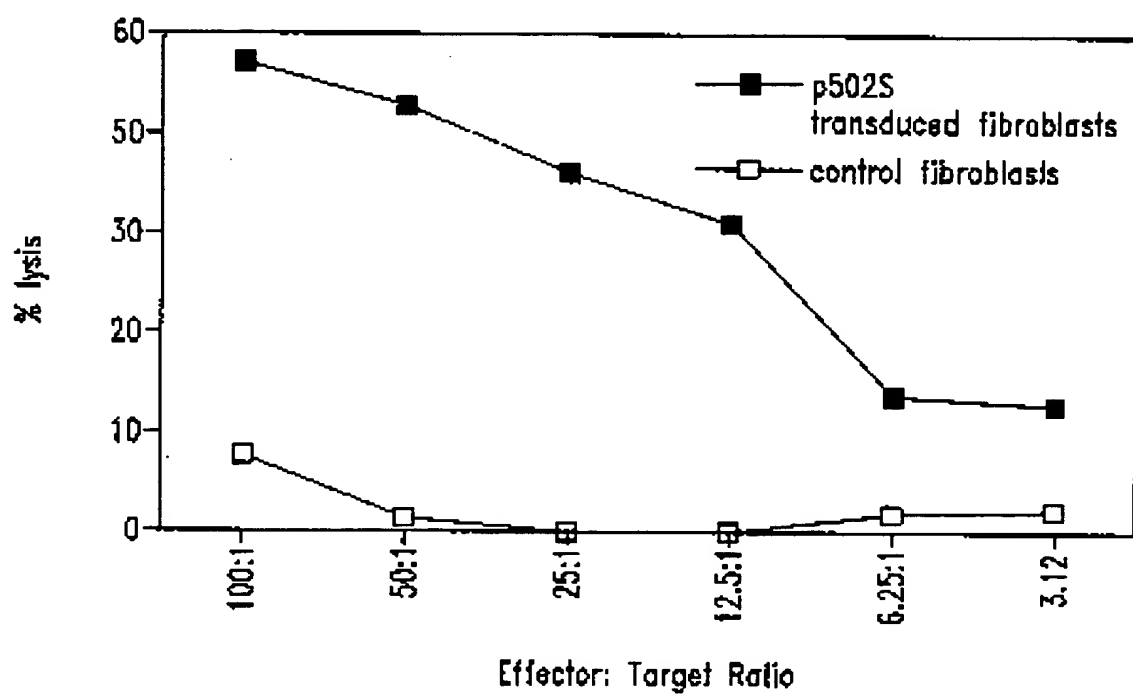
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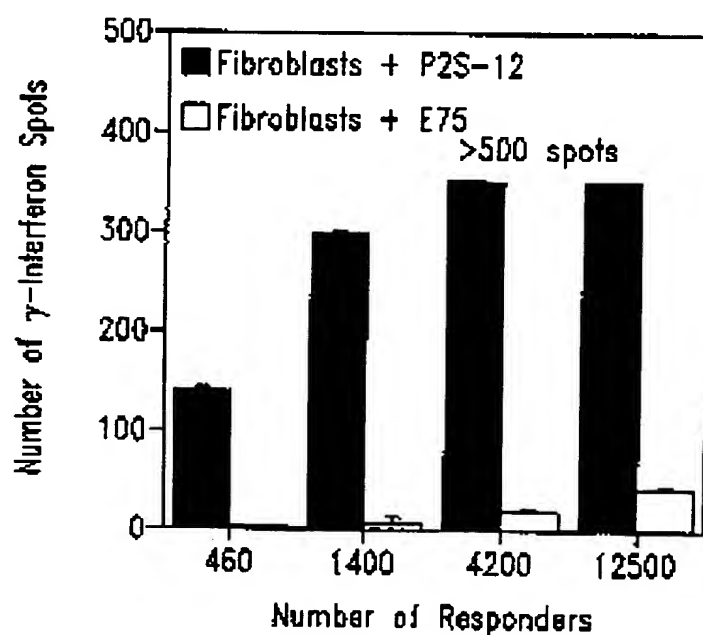
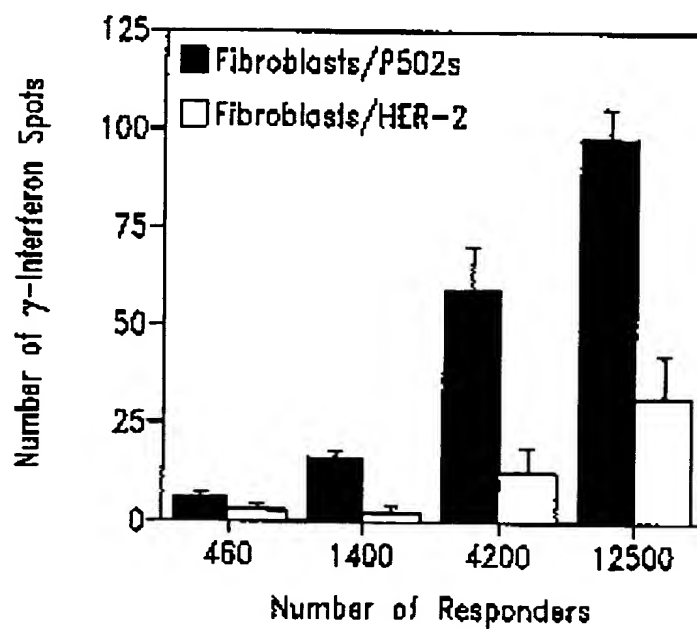
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*Fig. 1*

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*Fig. 2A**Fig. 2B*

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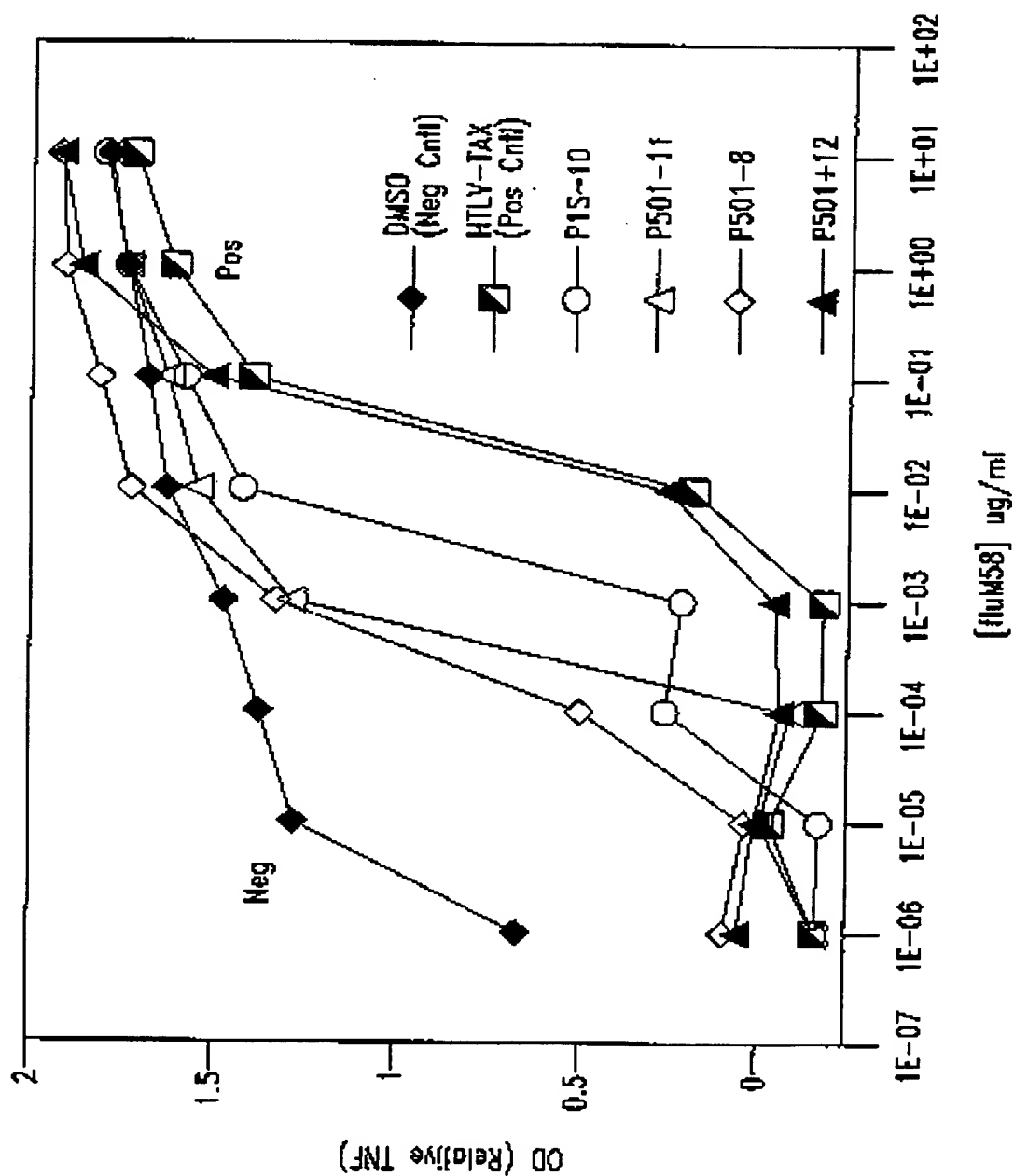
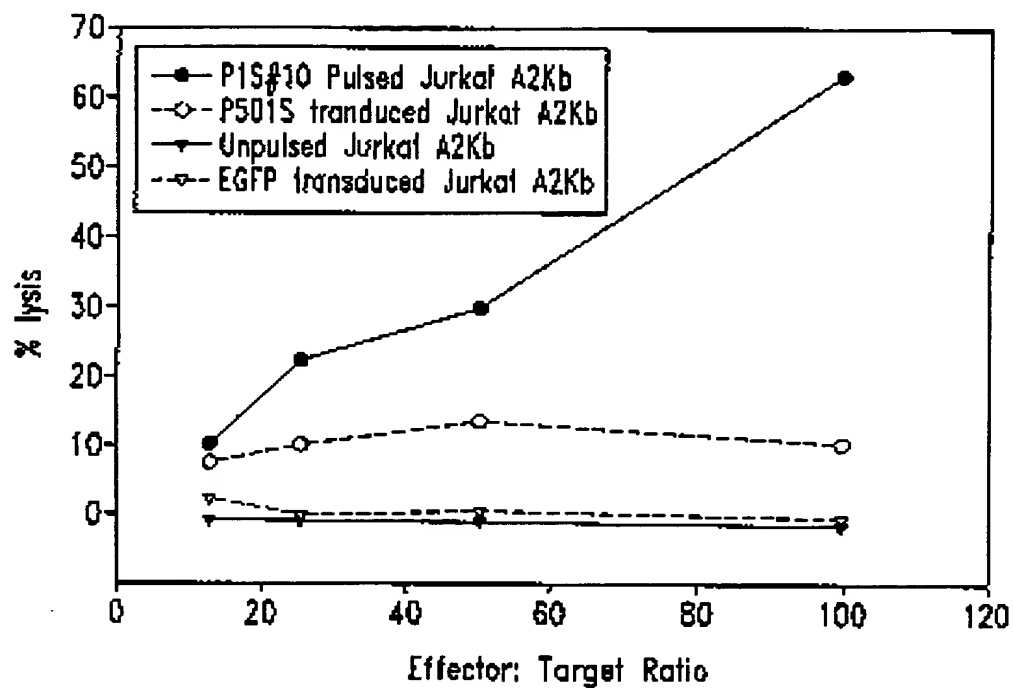
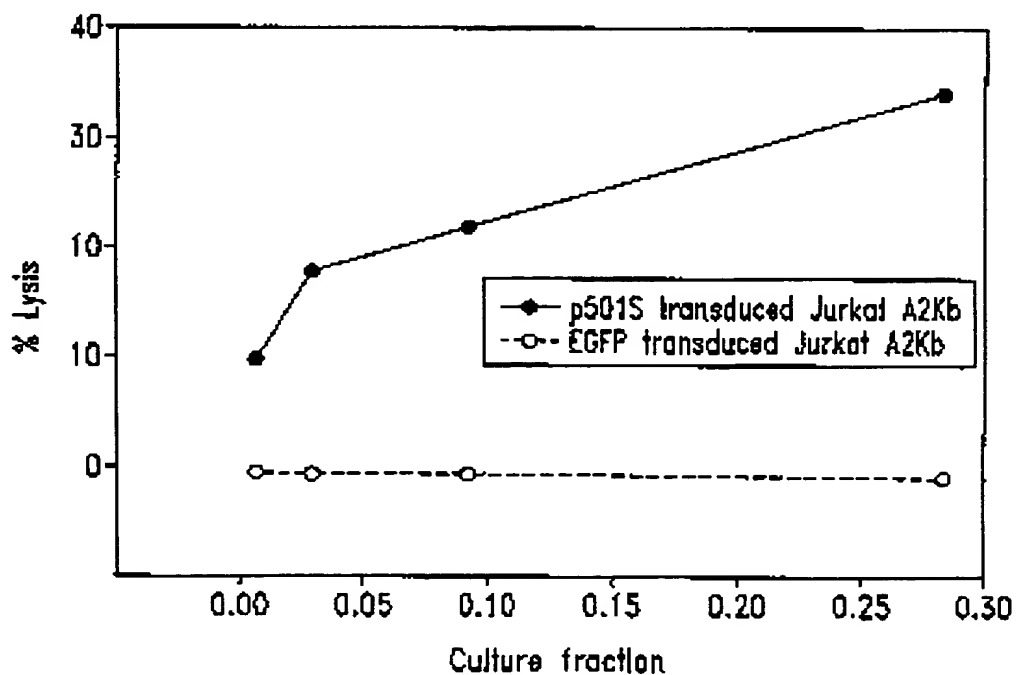


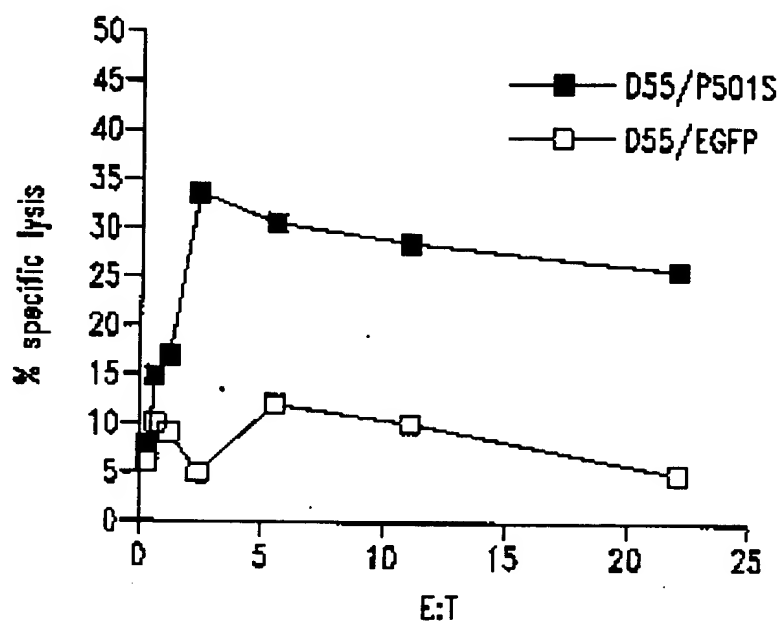
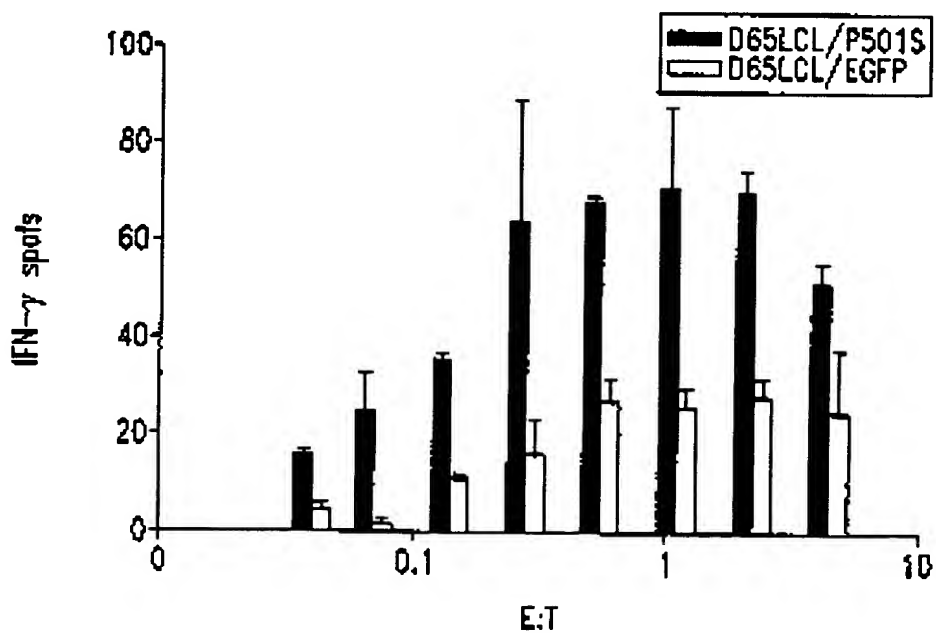
Fig. 3

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*Fig. 4**Fig. 5*

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*Fig. 6**Fig. 7*

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<120> COMPOUNDS FOR IMMUNOTHERAPY AND DIAGNOSIS
OF PROSTATE CANCER AND METHODS FOR THEIR USE

<130> 210121.42701PC

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<211> 773

<212> DNA

<213> Homo sapien

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gaatgggnaa	atgggacccc	cctgttaacc	cgcattnaac	ccccgcnggg	tttngttgtt	660
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<210> 4

<211> 828

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

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<223> n = A,T,C or G

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<211> B34
<212> DNA
<213> Homo sapien

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<220>
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<223> n = A,T,C or G

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tgnatnacag tgttccanag ttncaaacta ctgggaacat acagtgtgct tgaattcaaa 780
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<211> 818
<212> DNA
<213> Homo sapien

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gtcatanga	nggctnaaaa	ggccttghta	nggggtctggg	ctnggtttta	cccnarccat	780
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<210> 7

<211> 817

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

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<223> n = A,T,C or G

<400> 7

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<210> 8

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

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<223> n = A,T,C or G

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caagmectgn	atccactnnt	netanaaccc	gcncncnccg	cngtgggaac	cnccttntgt	600
tccctttcct	tnagggttaa	tnnccgcttg	gccttnccan	ngtccctncc	nttttccnnt	660
gttnaaattg	ttangcnc	nccnntcccn	cncnncnncn	cccgaccnnc	anncttngann	720

ncctgggggt nccnnngat: tgadccnncc nccctntant. tgcnltnggg nccnntggcc 780
ctttccctct nggyanncc 799

<210> 9
<211> 801
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{801}
<223> n = A,T,C or G

<400> 9
acgccttgat cctcccaggg tgggaactggg tctggggagga gccggggcatg ctgtgggtttg 60
taangatgac actcccdaag gtgggtectga cagtggcccca gatggacatg gggctcaact 120
caggagacaag gccaccaggt ggggggggucg aagcccacat gatcccttact ctatgagcaa 180
aatcccctgt gggggcttct ccttgaagtc cgcnnncagg gctcagtctt tggaccacag 240
caggtuatgg ggttgtngnc caactggggg ucncaargca aaangggcnca gggcctcngn 300
caccatccn angacggggc taactnctg gacctcccnc tccaccactt tcatgcyctg 360
tccntacccg cgnatntgtc ccnctgttl cngtgcenac tccancttct nggacgtgag 420
ctacatacgc ccggantcnc nctcccgtt tgtccctatc cacytnccan caacaaattt 480
cnccntantg caccnattcc cacttttnc agntttccnc nncgngcttc cttnataaag 540
ggttganccc cggaaantnc cccaaagggg gggggccngg taccdaactn cccctnata 600
gctgaantcc ccatnaccnn gactcnatgg anccntccnt ttttaannacn tctctnaact 660
gggaananc ctcgnccntn ccccnctta tcccncttg cnangnnont ccccnntcc 720
ncccnntng gcnctnann cnazaaaggc cennnncaa tctcctnnn cctcanttcg 780
ccanccctcg aantcggcn c 801

<210> 10
<211> 789
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{789}
<223> n = A,T,C or G

<400> 10
cagtctatnt ggcacgtgtg gcagctttcc ctgtggctgc cgggtgcaca tgcctgtccc 60
acagtgtggc cgtggtgaca gcttcagccg ccttcacccg gtccaccttc tcagccctgc 120
agatcctgrr ctacacactg gctccctct accaccggga gaagcaggtg ttcctgccca 180
aetaccgagg ggcactgga ggtgttagca gtgaggacag cctgatgacc agcttccctg 240
caggccctaa gcctggagct ccttcccta atggacacgt ggggtgtgga ggcagtyggc 300
tgctcccaac tccaccggc ctctggggg cctctgctg tgatgtctcc gtacgtgtgg 360
tggtgggtga gcccaccgan gccagggtgg ttcgggguc gggcatctgc ctggacctcg 420
ccatcctgga tagtgcttcc tgcgtccca ngtggccca tccctgttta tgggctccat 480
tgtccagctc agccagtctg tnatgccta tatggtgtc gercagggc tgggtctggt 540
cccatttact tggctacaca ggtantatt gacaagaacg anttggcca aactcagcg 600
ttaaanaatt ccagcaacat. tgggggtgga aggcctgcct cactgggtcc aactcccg 660
tctgttaac cccatggggc tgcgggttg gccgcaatt tctgttgcg ccaaanntat 720
gtggctctct gctgccacct gttgctgggt gaagtgcnta cngcnanct nggggggtng 780
ggngtccc 789

<210> 11
 <211> 772
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(772)
 <223> n = A,T,C or G

<400> 11
 cccaccctac ccaaatatta gacaccaaca cagaaaagct agcaatggat tccctttctac 60
 ttgtttaaat aattaaattt aatattttaa tgcctgtgtc tctgtgatgg caacagaagg 120
 accaacaggc cacatcctga taaaaggtaa yaggggggtg gatcagcaaa aagacagtg 180
 tgtgggtgta ygggacctgg ttcttgtgtg ttgcccctca ggaactcttc cctacaaata 240
 actttcataa gttaaaatcc catggggagg tgtttcatcc tagaaactcc catgcaagag 300
 ctacattaaa cgaagctgca ggttaagggg cttanagatg ggaacccagg tgactgagtt 360
 tatteagctc ccaaaaaccc ttctctaggc gtgtctcaac tagggaggcta gctgttaacc 420
 ctgagccctg gtaatccacc tgcagagtc cgcatttcc gtgcctggaa ccttctggc 480
 ctccctgtat aagtcragat tgaaccccc ttggaaggnc tccagtcagg cagccctana 540
 aactggggaa aaaaagaaaag gacgcccac ccccagctg tgcactacg caactcaaca 600
 gcacgggtg gcagcaaaa aaccarttta ctctggcaca aacaaaact ngggggggca 660
 accccggcac ccnangggg gttaacagga anongggnaa cntgggaccc aattnaggca 720
 ggcccnccac ccnaatntt gctgggaaat ttttctctcc utaaattntt tc 772

<210> 12
 <211> 751
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(751)
 <223> n = A,T,C or G

<400> 12
 gccccaattc cagctgcac accaccacg gtgactgcat tagttcggat gtrataraaa 60
 agctgattga agcaaccctc tacttttttg tctgtagcct ttgtcttggg gcaggtttca 120
 ttggctgtgt tggtagagt gtcatgcaa cagaatgggg gaaaggcaat gttctctttg 180
 aagtanggtg agtcctcaaa atccgtatag ttggtgaagc canagcactt gagccctttc 240
 atggtggtgt tccacaattg agtgaagtct tcttgggaac cataatcttt cttagtgcca 300
 ggcaactacca gcaacgtcag ggaagtgtc agccatttg gtgtacacca aggcgaccac 360
 agcagctgcn acctcagcaa tgaagatgan gagganagt asgaagaacg tcnngggggc 420
 accttgcctc tcagtccttan caccatanca gcccttgaaa accaanahca aagaccacna 480
 cncggctgc gatgaagaaa tnaccccnag ttgaacaaat tgcattggca tgggancac 540
 agtggcccca aaaaatttca aazaggatgc cccatcnatt gaccccccac atgcccactg 600
 ccaacagggg ctgccccacn cncnnaacga tganccnatt gnacaagatc tncntggctc 660
 tnatnaent gaacctgcn tngtggctcc tgttcaggnc cnggocctga cttctnaann 720
 aangaactcn gaagncccca cngganannc g 751

<210> 13
 <211> 729
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(729)
 <223> n = A,T,C or G

<400> 13

gagccaggcg	tccctctgco	tgcacactca	gtggcaaccc	ccgggagctg	ttttgtccct	60
tgtggancc	cagcagtncc	ctctttcaga	actcantgcc	aagancctcg	aacaggagcc	120
accatgcagt	gcttcagctt	cattaagacc	atgatgatcc	cttcaattt	gctnalcctt	180
ctgtgtggtg	cagccctgtt	ggcagtgggc	atctgggtgt	caatcgatgg	ggcatccttt	240
ctgaagatct	tggggccact	gtcgtccagt	gccatgcagt	ttgtcaacgt	gggctacttc	300
ctcatcgag	ccggcgctgt	ggctcttctt	ctaggcttcc	tgggctgcta	tgttgctaag	360
actgagagca	agtgtgccc	cgtgacgttc	ttcttcctcc	tcctcctcat	cttcatttct	420
gaggttgcaa	tgtgtgtgtc	gccttgggtg	acaccccaat	ggctgagcac	ttcctgargt	480
tgtgtgtctt	gtctgcccac	aanaaaagat	tatgggttcc	caggaaactt	tcactcaagt	540
gttggaaacac	caccatgaaa	gggctcaggt	gctgtggctt	cnnccaaacta	tcaggatttt	600
gaagantcac	ctaactcaaa	gaaaanagtg	cctttccccc	attctctgtg	caattgacaa	660
acgtcccca	cacagccaat	tgaaaaacctg	cacccccc	aaangggctc	cccaaccana	720
attnaagg						729

<210> 14
 <211> 816
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(816)
 <223> n = A,T,C or G

<400> 14

tgtcttctcc	caaggttgtt	cttcttgcac	taacacccac	cataggtaaa	gogggcgtag	60
tgttccgtga	aggggttgtt	gtacragcgc	gggatgctct	ccttgccagag	tcctgtgtct	120
ggcaggtcca	cgragtgcgc	tttgtcactg	gggaatgga	tgcgttgag	ctcgtcaaag	180
ccactcgtgt	atttttcaca	ggcagcctcg	tcgcgcgcgt	cgggycagtt	gggggtgtct	240
tcacactcca	ggaaactgtc	natgcagcag	ccattgctgc	agcggaaacta	ggtggcctga	300
cangtgcacg	agcaactgg	atggcgccctt	tcctatgnan	gggcccctgng	ggaaagtccc	360
tgancccca	anctgcctct	caaaangcccc	acottgraca	ccccgcagag	ctagaatgga	420
atcttcttcc	cgaaggttag	ttnttcttgt	tgcacaaac	anccccntaa	acaaactctt	480
granatctgc	tccgnggggg	tcntantacc	ancgtgggaa	aagaaacccc	ggngcgaac	540
caancttgtt	tggatncgaa	gcnataatct	ncntttctgc	ttggtggaca	gcaccantna	600
ctgttnanct	ttagnccntg	gtcctcctgg	gttgnncttg	aacctaatcn	ccnntcaact	660
gggacaaggt	aantngccnt	ccttttaatt	cccnanctnt	ccccctgggt	tggggctttt	720
cncnctccta	ccccagaaa	nccgtgttcc	cccccaacta	ggggccnaaa	ccnnttnttc	780
caacacccctn	ccccacccac	gggttcngnt	ggtcng			816

<210> 15
 <211> 783
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(783)
 <223> n = A,T,C or G

<400> 15

ccaaggcctg	ggcaggeata	naattgaagg	tacaacccca	ggaaacccctg	gtgctgaagg	60
atgtggaaa	cacagattgg	cgccactgcn	ggggtpacac	ggatgtcagg	gtagagagga	120
aagacccaaa	ccaggtggaa	clgtggygac	tcaagggaang	ccctacctg	ttccagctga	180
cagtgaclag	ctcagacccac	ccagaggana	cggccaaact	cacagtcact	gtgctgtcca	240
ccaagcagac	agaagactac	tgcctcgcat	craacaangt	gggtcgctgc	cggggccttt	300
tcccacgctg	gtactatgac	ccracggagc	agatctgcaa	gagtttcgtt	tatggaggct	360
gcttgggcaa	caagaacaa	taccttcggg	aagaagagtg	cattctancc	tgtcngggtg	420
tgcagggtgg	gcctttgana	ngcanctctg	gggtctange	gactttcccc	caggggccct	480
ccatggaaa	gagccatcca	ntgtttctctg	gcacctgtca	gcacacccag	ttcrgctgca	540
ncatgggctg	ctgcatonac	antttctctg	aattgtgaca	acacccccca	ntgcccccaa	600
ccctcccaac	aaagcttccc	tgttcaaaaa	tacnccantt	ggcttttnac	aaacncccg	660
cncctccttt	ttcccnctn	aacaaagggt	ncctngcttt	gaactgcccn	aaacnnggaa	720
ctnccnngg	aaaaantncc	ccccctgggt	cctnaancc	cctccncaa	anctncccc	780
ccc						783

<210> 16

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(801)

<223> n = A,T,C or G

<400> 16

gccccaattc	cagctgcac	acacccacg	gtgactgcat	tagttcggat	gtcacaacaa	60
agctgabtga	agcaccctc	tactttttgg	tcgtgagcct	tttgcttgg	gcagggttca	120
ttggctgtgt	tggtagcgtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagttagggtg	agtcctcaaa	atcgtatag	ttggtgaagc	cacagcactt	gagccctttc	240
atggtgggtgt	tcacacttg	agtgaagtct	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcacgtcag	gaagtgtca	gcuatgtgtg	tgtacaccac	ggcgaccaca	360
gcagctgcaa	cctcagrac	gaagatgagg	aggaggatga	agaaagaact	cncgagggca	420
cacttgcctt	cgtctttagc	accatagcag	ccuanguaac	caagagcaca	gaccacaacg	480
congtcgrga	atgaaagaaa	ntacccacgt	tgacaaactg	cctggccact	ggacgacagt	540
tggcccgaa	atcttcagaa	aagggatgcc	ccatcgattg	aacaccgana	tgcccactgc	600
cnacaggggt	gcnccnccn	gaagaatga	gcattggaag	aaggatcctc	ntggtcttaa	660
tgaactgaaa	ccntgcattg	tggccctgt	tcagggtctt	cggcagtga	ttctganaaa	720
aagggaacngc	ntnagccccc	cuaaangana	aaacaccccc	gggtgttgcc	ctgaattggc	780
ggccaaggan	ccctgccccn	g				801

<210> 17

<211> 740

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(740)

<223> n = A,T,C or G

<400> 17

gtgagagcca	ggcgtccctc	tgcctgcccc	ctcagtggca	acacccggga	gctgtttctgt	60
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cctttgtgga	gctcagcag	ttccctcttt	cagaactrac	tgccaaagagc	cctgaacagg	120
agccaccatg	cagtgcctca	gcttcattaa	gaccatgatg	atcctcttca	atttgctcat	180
ctttctgtgt	ggtgcagccc	tgttggcagt	gggcattctg	gtgtcaatcg	atggggcctc	240
ctttctgaag	atcttcgggc	cactgtcgtc	cagtgcacatg	cagtttgtca	acgtgggcta	300
ctccctcctc	gcagccggcg	ctgtggctct	tgtctcttgg	ttcctgggct	gctatggtgc	360
taagacggag	agcaagtgtg	cctcgtgac	gtctctcttc	atcctcctcc	tcactctcat	420
tgttgaggtt	gcagctgctg	tggtcgctt	ggtgtacacc	acaatggctg	aaccattctt	480
gacgttgtgt	gtantgctg	cactcaanaa	agcttatggg	ttcccaggaa	aaattcactc	540
aentntgyaa	cacncccatg	aaaagggtct	caatttctgn	tggcttcccc	aactataccg	600
gaattttgaa	agantcncct	tacttccaaa	aaaaaanant	tgccttctnc	ccntttctgt	660
tgcactgaaa	acntcccaan	acngccaatn	aaacctgctc	cnmcaaaaa	ggntcncaaa	720
czaaaaaant	nnaagggttn					740

<210> 18

<211> 802

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(802)

<223> n = A,T,C or G

<400> 18

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caagggtcttc	cagctgccgc	acattacgca	gggcaagagc	ctccagcaac	actgcataatg	120
ggatcacactt	tacttttagc	gccagggtga	caactgagag	gtgtcgaagc	ttattcttct	180
gagcctctgt	tagtggagga	agattccggg	cttcagctaa	gtagtangcg	tatgtcccat	240
aaacaaacac	tgtgagcagc	cggaaaggtag	aggcaagctc	actctcagcc	agctctctaa	300
cattggggcat	gtccagcagt	tctcraaaca	cgtagacacc	agnggccttc	agcactgat	360
ggatgagctgt	ggccagcgtc	gcccccttgg	ccgacttggc	taggagcaga	aattgtctct	420
ggttctgccc	tgtcaccttc	acttcgcac	tcctcactgc	actgagtgtg	ggggacttgg	480
gtccaggtatg	tccagagagc	tggttccguc	ccctccttca	atgacaccgn	ccanncaacc	540
gtccgcterc	tcagantgng	ttcgtcgtnc	ctgggtcagg	gtctgctggc	cactacttgc	600
aacttctgct	nggcccctgg	aattcacenc	accggaactn	glangatcca	ctnnttctat	660
aacoggncgc	caccgcnnnt	ggaaactrac	tcttnttnc	tttactcgag	ggttaaggctc	720
accctttnoc	ttacettggg	ccaaacntn	ccntgtgtcg	anattngtnaa	tcnggncna	780
tnccanccnc	atangaagcc	ng				802

<210> 19

<211> 731

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(731)

<223> n = A,T,C or G

<400> 19

cnaagcttcc	aggtnacggg	cgcnaencc	tgaccnagg	tancanaang	cagncngcgg	60
gagcccaccc	tcacgnngng	gngctcttat	nggagggggc	ggagcccat	cactggacnt	120
cntgaccccc	actcccncc	ncncantgca	gtgatgagtg	cagaaactgaa	ggtnacgtgg	180
caggaaacca	gancaaannu	tgtccnntc	caagtgggcn	nagggggcgg	ggctggccac	240
gencatccnt	cnagtgtctn	aaagcccnm	cctgtctact	tgttttyaga	acngcnngga	300

catgcccagn	gtlenatnac	nggcngagag	tnantlctgc	tctcccttcc	ggctgcgrcn	360
ngngentget	tagnngarat	ancctgactn	cttaactgaa	ccnnngaate	tnccnccct	420
ccactaagrt	cagaacaaaa	aatctcgaca	ccactcantt	gtccactgnc	tgttcaagta	480
aagtgtaccc	catncccaat	gtntgclnga	ngctctgnc	tgcttlangt	tgggtccctg	540
gaagacctat	caattnaagc	tatgtttctg	actgcctctt	gtccctgna	acaanccncc	600
cnnctntcva	agggggggnc	ggcccccaat	ccccccaacc	ntnaattnan	tttancctcn	660
ccccnggac	cggcctttta	cnancntcn	nnacngggnc	aaacccnngc	tttncccaac	720
nnaatccncc	t					731

<210> 20
 <211> 754
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(754)
 <223> n = A,T,C or G

<400> 20						
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caaccccctc	ntccaaatun	ccntttccgg	gnggggggtc	caaaccctaa	ttanntttgg	120
annttaaat	aatnttont	tggngynna	anccnaatgt	nangaaagtt	naaccanta	180
tnancttnaa	tncttgga	ccngtngnt	ccaaaaatnt	ttaaccctta	antccctcgc	240
aatngttna	nygaaacccc	aanctctont	aaggttggtt	gaaggntnaa	tnaaaanccc	300
nccccattgt	ttttngccac	gcctgaatta	attggntctc	gntgttttcc	nttaaaanaa	360
ggnnancccc	ggttantnaa	ccccccnnc	cccaattata	ccganttttt	ttngaattgg	420
genccccngg	gaattaacgg	ggnnntccr	tnntgggggg	cgngncccc	ccccctcggg	480
ggttngggnc	aggnccnaat	tgtttaaggg	tccgaaaaat	ccctccnaga	aaaaaanctc	540
ccaggttgag	natnggggtt	cccccccccc	canggccrct	ctcquanagt	tggggtttgg	600
ggggcctggg	attttntttc	ccctnttccc	cccccccccc	ccnggganag	aggttngngt	660
ttgtntcnc	ggcccnccn	aaganccttn	ccganttnan	ttaatccnt	gcctnggcga	720
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<210> 21
 <211> 755
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(755)
 <223> n = A,T,C or G

<400> 21						
atcancccat	gaccccnac	nggggacccc	tcancgggc	noncnacccc	cgcccnatca	60
ngtnagnc	actcnnttn	natccnccc	cnccnactac	gcccnnnanc	cnacgcctca	120
nnanatancc	actganngcg	cgangtngan	ngagaaanct	nataccanag	ncaccanacn	180
ccagctgtcc	nanaangcct	nnnatccngg	nnnatccaat	ntgnancctc	cnaggtattn	240
nnccnccnat	gattttccctn	anccgattac	ccntnccccc	tanccctctc	cccccaacna	300
cgaaaggnct	ggncnnaagg	nggcgncccc	ccgtagntc	ccnncaagt	cnccncccta	360
aactcancn	nattacncc	ttcttgagta	tcactccccc	aatctcacc	tactcaactc	420
aaaaanatan	gatacaaat	aatncaagcc	tgnttatnac	actntgactg	ggctctctatt	480
ttagnggtcc	ntnaancntc	ctaatacttc	cagctcncct	tcncccaatt	ccnaanggct	540
ctttcngaca	gcantttttg	gtcccnntt	gggttcttan	ngaattgccc	ttctnngaac	600

gggtctctct	tttctctcgg	tttctctcgg	tttctctcgg	caattattat	tttctctctt	660
aaattctctc	cttctctctt	tggtctctc	aaattctctc	cttctctctt	gggtctctct	720
aaaaggtctg	tttctctctt	tttctctctt	gtctctct			755

<210> 22

<211> 849

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(849)

<223> n = A,T,C or G

<400> 22

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
acgtctggan	taangcgacc	cgantttctag	gannctctct	aaatctctct	tggtctctct	120
atctctgann	tggtctctct	acgtctctct	ttttctctct	tggtctctct	cttctctctt	180
ctctctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	240
tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	300
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tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	420
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<210> 23

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(872)

<223> n = A,T,C or G

<400> 23

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tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	180
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tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	600
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tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	tggtctctct	780

ntctcccccg ngngcncntc tcaaguctenc cccccccnt ctctycantg tncctctgctc 840
tnaccnntac gantnttcgn cncctctctt cc 872

<210> 24
<211> 815
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(815)
<223> n = A,T,C or G

<400> 24
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nctgncctcc tctgtcaaat gtatacnaaa tcnatctgaa tctnatntga caaganngtg 120
tcntncatta gtaacaantg tntgtccat cctgtcngan canatterca tnnattnegn 180
cgcattcnan gcncaantat taatngggaa ntannntnon ncacccnccat ctatctncc 240
gcnccctgac tggmagagat ggalnantt tntntgacc nactgttca tcttggattn 300
aanancerc cngcngcccac cgggtngnng cnagccnntc ccaagacctc ctgtggaggt 360
aaccttgcct agannccatca aacntggga acccgcnnc anglnaagt ngnnncan 420
gatercgtcc aggnctnacc atcccttnc agcgcacct tngtgcct anagngnagc 480
gtgtccnanc cnotcaacat ganacgcgc agnucancc caatlngga caatgtcngc 540
gaaccccta gggggantna tncaanccc caggattgtc unoncangaa atcccnccnc 600
ccnccctac cccncttgg gacngtgac aanteccgga glnccagtc ggcngnctc 660
cccccacggg nnccttgggg gggtagaant cngnntcanc cngnccaggn ntcgnaagg 720
accggnctn ggcggaang ancnctcng agngccnnt cgtataacc cccctcncca 780
nccnccngnt agntccccc cngggtnccg aangg 815

<210> 25
<211> 775
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(775)
<223> n = A,T,C or G

<400> 25
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aggctatcca gctactcca aagattcagg ttactracg tcatccagca gagaatggaa 120
agtc aaattt cctgaattgc tatgtgtctg ggtttcatcc atccgacatt gaanttgact 180
tactgaagaa tgganagaga attgaaaaag tggagcattc agacttgtct ttcagcgaag 240
actggctctt ctatctctg tactacactg aattcaccac cactgaaaa gatgagtatg 300
cctgcccgtg gaaccatgtg actttgtcac agcccaagat agttaagtgg gatcgagaca 360
tgtaaagcag cnnccatggaa gtttgaaagt gcgcatttg gattggaatg atcccaatt 420
ctgcttgcct gcttttcaat antgatatgc ntatccacc taccctttat gncuccaaat 480
tgtaggggtt acatnangt tcnctnngga catgatctt ctttataant cncncttct 540
aattgcccgt cncnngttn ngaatgttcc cnaaacccag gttgggtccc ccaggtcnc 600
tcttaaggaa gggcctgggc cnccttncaa ggttggggga accnaaaatt tcncttntgc 660
cncnccncca cmtcttngg nncncaantt ggaacccctc cnatccccc tggcctcna 720
nccctncta aaaaaactn aannogtngc naannnttn actccccc tacc 775

<210> 26

<211> 820

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(820)

<223> n = A,T,C or G

<400> 26

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anattantac agtgtaatct. tttccvayag gtgtgtanag ggaacggggc ctagaggcat      60
cccanaqata ncttatanea acagtgcctt gaccaaaggc tgcctgggac atttcctgca      120
gaaaagggtgg cggtecccat. cactcctcct ctcccatagc catcccagag yggtagtag      180
ccatcanqcc ttcgggtggg gggagtcang gaaacaaacn accacagagc anacagacca      240
ntgatgarra tgggcggggag cggagcctct cctgmaccg gggtaggcana nganagccta      300
nctgaggggt ccaactataa acgttaacga cmnagatnan cactgccttc aagtgcaccc      360
tctctacctg acnaccagng accnnnaact gcngcctggg garagencctg gganacagcta      420
acnnagcact. cactgcaccc cccatggcgg tncgcnccu tggctcctgnc aaggggaagct      480
ccctgttggg attncgggga naccaaaggga nccccctct ccanctgtga aggaaaaann      540
gatggaatkt. tncctctcgg gccntcccc tcttctcttc caagcctct nntactcttc      600
tccctctntt nctctgnenc acttttnacc cennnatctt ccttnaktga ccyganncn      660
ganattccac tnnccctcnc cntenatong naanacnaas nactntctna cccnggggat      720
gggnndctcg ntcactctct etttttenct accnccnntt ctttgcctct ccttngatca
780tccaaacntc gntggcctn ccccccnna tcttttncn
820

```

<210> 27

<211> 818

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(818)

<223> n = A,T,C or G

<400> 27

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tgtttcttct ccgagcccca ggcaggggtg attcagccct gcccaacctg attctgatga      120
ctgaggtatgc tgtgacggac ccaaggggga aakagagctc cagggtccag ggaagggcgc      180
ctgctgagca ctcccgccc tcaacutgce cagccctgac catgagctct gggtgggtc      240
tccgcttcaa gggttctgct ctccangca nqccancaa gggcgtggg ccaactggc      300
ttctctcagc cccntccctg gctctganc tctgtcttcc tgtcctgtgc angcncctg      360
gctctcagtt tccctcncct anngaactct gttctgann tcttcantta actntgantt      420
tatnaccnan tggnotgtnc tgcnnactt taatgggcn gacoggetaa tccctccctc      480
nctcccttcc anttcnnnaa accnqcttnc cntentctcc cntancccg ccngggaanc      540
ctcccttggc ctaccangg gccnnnaccg cccntnctn ggggggcnng gtnnutnnc      600
ctgntnncc cncctcncnt tccctgtcc cnnnnnngcn anqcannttc nngtcccn      660
tnnetcttcc ngntnctgnaa ngntnctn tnnnnnnn ngntnctn tccctctnc      720
cnnntgnag tnnntnnnc ncnngnccc nnnnnnnn nggntnnn tptncnngc      780
ccnncccc ngnattaggg cctccnntct ccggcnc      818

```

<210> 28

<211> 731

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(731)

<223> n = A,T,C or G

<400> 28

aggaagggcg	gagggatatt	gtangggatt	gagggatagg	agnateangy	gggaggtgtg	60
tcccaacatg	anggtgngt	tctcttttga	angaggggtg	ngtttttann	ccnggtgggt	120
gattnaaccc	catgtgatgg	agnnaaagg	tttnagggat	ttttcggctc	ttatcagfat	180
ntanattoct	gtnaatcgga	aatnatntt	tanncnggaa	aatnttgctc	ccatccgnaa	240
atttctcccg	ggtagtgcat	nttngggggn	cngccangtt	tcccagggtg	ctanaaatgt	300
actaaagntt	naagtgggan	tcaaatgaa	aacctnncc	agagnatccn	taccugactg	360
tnntttacct	tggccctntg	actctgcnng	agcccaatar	ccnngngnat	gtcncccnng	420
unngcgunc	tgaannnncc	tcgnggctnn	gancatcang	gggtttcgca	tcaaaagcnn	480
cgtttcncat	naaggcactt	tngccctaat	caaccnctng	ccctcnncca	tttngccgtc	540
nggttcnctt	acgtntntng	cnctnnntn	gancttttnc	ccgcttnggg	naandctct	600
gnaatgggta	gggncttntc	tttlnacnn	gnggtntact	aatcnnctnc	acgentnctt	660
tctcnacccc	cccccttttt	caatccanc	ggcnaatggg	gtctcccn	cgangggggg	720
nnnccannc	c					731

<210> 29

<211> R22

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(822)

<223> n = A,T,C or G

<400> 29

actagtccag	tgtgggtggaa	ttccattgtg	ttgyggncnc	ttctatgant	antnttagat	60
cgtcnaacc	tccancctc	cnacnange	ctataangaa	nannaataga	netgtcnnt	120
atntntacnc	tcatannct	cnnaacccac	tccctottaa	ccctactgt	gcttatngcn	180
tnctantct	ntgcgcctn	cnanceacnc	gtgggcnac	cnongnat	ctcnatctcc	240
tonccatntn	gcctananta	ngtncatcc	ctataccctac	cccaatgcta	nnctaanen	300
ttcatnantt	annataacta	ccactgacnt	ngactttcnc	atnancctct	aatttgaatc	360
tactctgact	cccacngcct	annatttagc	anentccccc	nacnatntct	caaccaaate	420
ntcaacraacc	catctanctg	ttcnccaacc	nttncctcug	atcccnnac	aaccgccctc	480
ccaaatcccc	nccacctgac	ncctaaccnn	caacatcccg	gcaagccnnc	gymcatttan	540
ccantggact	ccnatngga	naaaaaaac	cnnaactctc	tanencnnat	ctccctaana	600
aatnctectn	naatttactn	ncantnccat	caancccaac	tgaacnnna	ccccgtttt	660
tanatccctt	ctttcgaaa	cnacccttt	annncccaac	ctttngggcc	ccccnctnc	720
ccnaatgaag	gncnccaat	cnangaaacg	nccntgaac	anccaggcna	anannntccg	780
canatcttat	cccttanttn	ggggncctt	nccnngggcc	cc		822

<210> 30

<211> 787

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (787)

<223> n = A,T,C or G

<400> 30

cggcgcctg	ctctggcaca	tgcctvctga	atggcatcaa	aagtgalgga	ctgcccatcg	60
ctagaggaaga	ccttctctcc	tactgtcatt	atggagccct	gcagactgag	ggctuccctt	120
gtctgcagga	tttgatgtct	gaagtcgtgg	agtgtggctt	ggagctcctc	atctacatna	180
gctggagacc	ctggaggggc	tctctcgcca	gcttcccctt	tctctccacg	ctctccangg	240
acacccaggg	ctccaggcag	cccatttctc	ccagnangac	atgggtgttc	tcacagggga	300
cccctggggc	ctgnaaggcc	agggtctcct	ttgacaccat	ctctcccgtc	ctgcttgcca	360
ggcctggga	tccactantc	ctanaacggg	cgccaccncc	gtgggaqctc	cagcttttgt	420
tccccttctc	gaaggttaat	tgcncgcttg	gcgtaatcat	nggtcanaan	tncttctgt	480
gtgaattgt	ttntccctc	ncnattccnc	nonacatacn	aaccgggaen	cataaagtgt	540
taagcctgg	gggtngcctn	ngaatnaac	tnaactcaat	taattgcgtt	ggctcatggc	600
ccgtttccn	ttcnggaaa	ctgtctctcc	ctgcttntnt	gaatcgccca	ccccccnggg	660
aaaagcgggt	tgcntttctg	ggggntccct	cnccttcccc	cctcctaan	ccctnccct	720
cggctcgttc	nggtngcggg	gaannggnat	nncctccnc	naagggggng	agnnngntat	780
ccccaaa						787

<210> 31

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (799)

<223> n = A,T,C or G

<400> 31

tttttttttt	tttttttggc	gatgctactg	tttaattgca	ggaggtgggg	gtgtgtgtac	60
catgtaccag	ggctattaga	agcaagaaag	agggagggag	ggcagagrgc	cctgctgagc	120
aacaaaggac	tectgcagcc	ttctctgtct	gtctcttggc	gcaggcccat	ggggaggcct	180
cccgcagggt	gggggcccac	agtcragggg	tgggagccat	acanggggtg	ggagtggggtg	240
gtggctggtn	cnaatggccl	gnacacnate	cctacgattc	ltgacacctg	gatttcacca	300
ggggaccttc	tyttctctca	nggnaacttc	ntnnatctcn	aaagaacaca	actgtttctt	360
cngcanttct	ggctgttcat	ggaaagccca	gggtgctnnat	ctngggtggg	acttggtacc	420
tatgggtctcg	gcccacctct	ccctctcaan	agtaattca	ccccccccc	ccctctcttg	480
cctgggacct	taantaccua	caccgggaact	canttantta	ttcatcttng	gntgggcttg	540
ntnatcncun	cctgaangcg	cacagtcgaa	aggccacgcc	gtncctctc	cccatagnan	600
nttttntnt	canttaaty	ccccccnggc	aacnattcca	tcccccccn	tgggggcccc	660
agccacaggg	ccccgctctg	ggnnncnngn	cncgnantcc	ccaggtcttc	ccantcngnc	720
ccnnngtnc	cccgccagca	gaacanaagg	ntngagccnc	cgcannnnnn	nggtlannac	780
ctcgccccc	ccnncgng					799

<210> 32

<211> 789

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (789)

<223> n = A,T,C or G

<400> 32

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tttttttttt	ggcagggttt	ttgacaacct	tttggggacac	aancagggtg	gggagcaggac	120
ggcaacaggc	tccggcgggc	gcccggcgcg	ccctacnctg	ggtacccaat	ntgcagcctc	180
cgtcccgct	tgatnttct	ctgcagctgc	aggtatgcct	aaaacagggc	ctgggccttn	240
ggtgggcacc	ctgggatctn	aatttccacg	ggcacaatgc	ggttggcacc	cctcaccacc	300
nattagynat	agtggtnctt	ccnccnccg	ttggcncact	ccnccnccg	acccacttnt	360
gaggctccgg	catctggctc	taaaacottgc	aaacnctggg	gcctctttt	tggttantnt	420
ncnngucaca	atcatnactc	agactggcnc	gggttggccc	caaaaaannc	cccccaaaacc	480
ggncatgct	tttncggggg	tgctgcnatn	tnctacnctc	ccggggcnca	ncaggncacc	540
ccaaagttc	ttgngcccn	caaaaaanct	ccgggggggc	ccagtttcaa	caaaagtcat	600
ccncttggc	cccaaatcc	ccccccgntt	ncgggttttg	ggaaaccacg	cctctnctt	660
tggngggcaa	gntggntcc	ccttcggggc	ccgggtgggc	ccnctctaa	nhaaaacncc	720
ntcctnncn	ccatccccc	nnnnnaccgc	tancaanyne	ccccctttt	tanaaaaggg	780
ccccccncc						789

<210> 33

<211> 793

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{793}

<223> n = A,T,C or G

<400> 33

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aattcatggc	tgttggagca	atanaaaccc	agttctarga	gclgctgato	aaaggacttg	120
gactaaaglc	tgaatgaact	cccaatcaga	tggccttggg	tgattggcca	gaatggana	180
agaagtttgc	agatgtattt	gcaaaagaga	cgaaggcaga	gtgggtgtca	atctttgacg	240
gcacagatgc	ctgtgtgact	cgggttctga	cttttgagga	ggttgttcat	catgatcaca	300
acaaagaaag	gggtctgttt	atcaccantg	agtagcagga	ngtgagcccc	cgccttgcac	360
ctctgtctgt	aaacaccccc	gcacatccct	ctttcaaaag	ggatccacta	cttctagagc	420
ggncgcccac	gggttggagc	tccagctttt	gttcccttta	gtgagggtta	attgcgcgct	480
tggcgtaatc	atggtcatan	ctgtttctct	tgtgaacttc	ttatccgctc	acaaatccac	540
acaaacatac	anccgggaag	atnaaaat	aaagcctggg	ggtngcctaa	tgantgaact	600
nactcacatt	aattggcttt	gcgtcactg	cccgttttc	agtcgggaaa	acctgtctct	660
gocagctgcc	nttaatgaat	cnggcacccc	cccggggaaa	agggcgtttg	cttnttgggg	720
ngccttccc	gccttcttgc	ttcttgaant	ccttcccccc	ggtctttcgg	cttgcagcna	780
acggtatena	cct					793

<210> 34

<211> 756

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{756}

<223> n = A,T,C or G

<400> 34

gncggagccg	gcattatcga	gcaactcaag	ggrgagtgga	accgtaaaag	ccccatctt	60
ancaagtgcg	gggaanagct	gggtcgaact	aaagtagtgc	ttctggagct	taactctctg	120

ccaaccacag	ggaccaagct	gannaaacag	caagtaattc	tggccngtga	catactggag	180
atcggggccc	aatgyagcat	catacogcan	gacatcccc	ccttcgagcg	ctaratggcc	240
cagctcaaat	gctactactt	tgattacaa	gggagctcc	cagagt.cagc	ctatatgrac	300
cagctcttgg	gcctcaaccc	cctcttccct	ctgtcccaga	accgggtggc	tgantccac	360
acgganttgg	ancggctgce	tgcaccaaga	cal.acanacc	aatgtctaca	tunaccacca	420
gtgt.cctgga	gcacatacga	tgyangggag	ctaccncaaa	gtnttccctg	cnnagggtta	480
cataccccgc	cgagagctac	accttcttca	t.cgaacatcc	gtcgcacact	atcaggggatg	540
aaaatcgeng	ggttgcctcca	gaaaggctnc	aanaaanatcc	ttctcnctga	aggccccggg	600
atcnctagat	ntagaatcg	gccccgcate	gggggtgganc	ctccaacctt	togtttccct	660
ttactgaggg	ttnatctgccc	cccttggcgt	tatcatggct	acncnggttn	cctgt.gttga	720
aattnttaac	ccccacaa	tccagcgcna	cattng			756

<210> 35

<211> 834

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (834)

<223> n = A,T,C or G

<400> 35

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aacaggatct	tgcctctga	gctctcggct	gctgtnttca	agtgtgtcag	tct.gccgtca	120
tgtcagaca	cncctctggg	caaaaacac	caggatntga	gtcttgattt	caactccaat	180
aactctcngg	gctgtctgct	cggtgaactc	gatgacnang	ggcagctggg	tgtgtntgat	240
aaantccanc	angtttccct	tggtagacct	cccttcaang	ttgttccggc	cttcatcaaa	300
cttctnnaan	angannanc	canccttgtc	gagctggnat	ttgganaaca	cgtcacrgct	360
ggaaactgat	cccaantggg	atgtcatcca	tgcctctctg	tgcctgcaaa	aaacttgcct	420
ggcncaate	cgactcccc	tctctgaag	aagccnatca	caacccccct	cctggactcc	480
nncanagac	ctnccgctnc	ccctccnng	cagggttggg	ggcannergg	gcccctgcgc	540
ttcttragec	agttcarnat	nttcatcagc	ccctctgcca	gctgttnbat	tctctggggg	600
gganccgtc	tctcccttcc	tgaannaart	ttgaccgtng	gmatagccgc	gntcnccnt	660
acntnctggg	cggggttcaa	antccctccn	ttgcnntcn	cctcggggcc	ttctggattt	720
nccnaacttt	ttcttccccc	cncccnccg	ngtttggntt	ttcatnnggg	ccccaaetct	780
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<210> 36

<211> 814

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (814)

<223> n = A,T,C or G

<400> 36

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cctagnaaac	attaatgggt	tgtcttacta	atacatcata	cnaacccgta	ngcctgcccc	120
naacgcccaac	tcaggccatt	cctaccaaaag	gaagaaaggc	tggctctctcc	accccttgta	180
ggaaaggcct	gccttgtaag	acaccacaa	noggttgaat	ctnaagtctt	gtgttttact	240
aatgggaaaa	aaataaazc	aanagggttt	gttctctctg	ctgcccaccc	cagcctggca	300
ctaaacacac	ccagcgctca	cttctgcttg	ganaaatatt	ctttgctctt	ttggacata	360

ggcttgatgg	tatcaactgac	acntttccac	ccagctgggc	ncctctccac	catntttgtc	420
antgancttg	agggcctgaa	ncctagtcac	caaaagtctc	ngccracaag	acgggcccac	480
aggggagtc	ntttccagtg	gatctgucac	anantaccn	tatcatcnn	gaataaaag	540
gccccgaaac	ganatgcttc	cancancctt	taagaccctt	aatcctngaa	ccatggtgcc	600
cttcgggtct	gatccnaaag	gaatgttctt	gggtcccant	ccctcctttg	ttctctacgt	660
tgtnttggaac	ccntgctngn	atnacccaan	tganatccac	ngaagraccc	tacccttggc	720
atttganttt	cntaaattct	ctgcuctaen	netgaaagca	cnatccctn	ggcncnnaen	780
ggngaacctc	ngaaggtctn	ngaaaaacca	cnen			814

<210> 37

<211> 760

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{760}

<223> n = A,T,C or G

<400> 37

gcctgctgct	cttctcaca	gttgttcttg	ttgcataaac	aaccaccata	ggtaagcgg	60
gcgagtggtt	cgctgaaggy	gttgtagtar	cagcgaggga	tgtctctctt	gcagagctct	120
gtgtctggca	ggtccacgca	atgccccttg	tcatctggga	aatggatggc	ctggagctcg	180
tcaaacccac	tctgtgtatt	ttccacangca	gcctcctccg	aaqcntccgg	gcagttgggg	240
gtgtcgtcac	actccactaa	actgtcgatn	cancagucca	ttgtctgagc	ggactctgggt	300
gggctgacag	gtgccagAAC	acactggatn	ggcctttcca	tgggaaggyu	tgggggaat	360
cncctnanc	caaacctgct	ctraaaggcc	accttgcaaa	cccgacagg	ctagaatgc	420
actctctctc	ccaaaggtag	ttgttcttgt	tgcacaagca	ncctccancc	nacaaaaanc	480
ttgcaaaatc	tgtctcgttg	gggtcatnnn	taccanggtt	ggggaanana	accggcngn	540
ganccnccct	tttgaaatgc	naaggnaata	atcctcctgt	cttgccttggg	tgganagva	600
caattgaact	gttaacnttg	ggcggngttc	cncctngggtg	gtctgaaact	aatcacccgc	660
actggaanaa	ggtangtgcc	ttccttgcaat	tcccaaanct	ccctctngntc	tgggtntttt	720
ctcctctncc	ctaaaaatcg	tnctccccc	cctangggcg			760

<210> 38

<211> 724

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{724}

<223> n = A,T,C or G

<400> 38

tttttttttt	tttttttttt	tttttttttt	tttttaaaaa	ccccctccat	tgaatgaaaa	60
cttccnaaat	tgtccaaacc	cctcnnccaa	atnucatttt	ccggggggggg	gttccaaacc	120
caaatatatt	ctggantttc	aattaaatnt	tnattngggg	aaaaanccaa	atgtnaagaa	180
aatttaacc	attatnaant	taaatnccct	gaaccctctg	gnttccaaaa	atttttaann	240
cttaaatccc	tcggaaattg	ntaanggaaa	accaaattcn	cctaaggctn	tttgaagggtt	300
ngatttaaac	ccctctnanc	tnttttnac	cnnngctnaa	ncatttngnt	tcgggtgttt	360
tccctnbaan	cctnggtaac	tcccgntaat	gaarunccct	aanccaatta	aacugaattt	420
tttttgaaat	ggaaactccn	ngggaaattna	ccgggggtttt	tcccttttgg	gggcatncc	480
ccctcttctg	gggtttgggg	ntagggtgaa	ttttctnnang	ncccaaaaaa	ncctccaaana	540
aaanaactcc	caagntttaa	ctngaatntc	ccctctccca	ggccttttgg	gaagggnggg	600

tttntggggg cgggggantt cnttcccnm ttnccncccc ccccccnggt aaanggttat	660
ngmntttggg ttttggggccc cttnanaggac ctccgggatn gaaatt,aaal ccccgggncg	720
gccc	729

<210> 39
 <211> 751
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (751)
 <223> n = A,T,C or G

<400> 39	
tttttttttt tttttctttg ctccacattta atttttattt tgattttttt taatgtctgca	60
caacacacata tttatttcat tcttttcttt tatttcattt tatttgtttg ctgctgctgt	120
tttatttatt tttactgaan gtaggggggga acttttctgg ccttttttcc tttttctgta	180
gycgccttta agctttctaa atttgggaaca tctaagcaag ctgaanggaa aaggggggttt	240
cgcacaaatca ctgggggggaa nggaagggtt gctttgttaa tcatgacctc tgytgggtga	300
tttaactgctt gtacacattac ntttcacttt taattaatlg tgcnaange tttaattane	360
cttgggggtt cctcccccac aaccaacccn ctgacaaaaa gtgcacggcc ccaatnatg	420
tcccggcnnn cnttgaaaac caungcngaa ngttctcatt ntcccccnc caggtnaaaa	480
tgaagggtta ccatntttta cncacactcc acntggcnnn gcctgaatcc tcncaaanon	540
cctcaanncn aatnctnnng ccccggtcnc gentongtc cnccggggt ccgggaantn	600
caccccnqa annccntnnc naacnaaatt ccgaaaatat tcccnctnc tcaattccc	660
cnnagactnt cctcnnncn cncaatttt tttcnctac gaacnccnnc cnaaaatgn	720
nnnnccctc cnetngtcn naatcnccn c	751

<210> 40
 <211> 753
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (753)
 <223> n = A,T,C or G

<400> 40	
gtggtatttt ctgtaagatc aggtgttctt cccctgtagg tttagaggaa acacccctcat	60
agatgaaaaa ccccccggga cagcagcact gcaactgcca agcagccggg gtaggagggg	120
cgccttatgc acagctgggc ccttgagaca gacgggttc gatgtcaggc tcatgtcaa	180
tggtctggaa ggcggggtg tacctgcgta ggggcacacc gtcagggtcc accaggaact	240
tctcaaagtt ccaggcaacn tcaattggac acaccggaga ccagggtgat agcttgggtt	300
dygtcatzan cgcgggtggc tegtgcgtgg gggctggcag ggcctccgc aggaaggcna	360
ataaaagggtg cgcgccggca cggttcact cgcacttctc naunaccatg angttgggt	420
cnaaccacac accannccgg atttcttga nggaattccc aaatctcttc gntcttgggc	480
ttctactgat gccctanctg gttgcacngn atgccaancc nccccaancc cgggggtcc	540
aaanccccc cctcctcttc tcatctgggt tntntcccc ggacnctggg tctctcaag	600
gyancccata tctcnaccan tactcactt nccccccnt gnnacccanc attctannn	660
ttcccncccg nccctctggc cntcaaanac gcttnacna cctgggtctg ccttcccccc	720
tnccctatct gnaccccnnc tttgtctcan tnt	753

<210> 41

<211> 341
 <212> DNA
 <213> Homo sapien

<400> 41
 actatatacca tcacaacaga catgcttcat cccatagact tcttgacata gcttcaaatg 60
 agtgaaccca tcttgattt atatacatat atgttctcag tattctggga gcccttccac 120
 ttcttcaaac cttgttcatt atgaacactg aaataggaa tctgtgaaga gttcaaaagt 180
 tatagcttgc ttacgtagt2 agtttttgaa gtctacattc aatccagaca cttagtccag 240
 tgttaactg tgattttta aaatatcat ttgagactat tctttcagag gtattttcat 300
 ctttactttt tgattaatg tgttttatat attagggtag t 341

<210> 42
 <211> 101
 <212> DNA
 <213> Homo sapien

<400> 42
 acttactgaa tttgattctg tgcctctcc tatttagtgt tgtaccataa atactttgat 60
 gttcaaaaca ttctaaataa ataattttca gtggcttcat a 101

<210> 43
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 43
 acatctttgt cacagtctaa gatgtgtct taaatcaca tctcttcttg gtcctcacc 60
 tccaggttg tctcactg taattagagc tattgaggag tctttacagc aaattaagat 120
 ccagatgct tgcctagtct agagttctag agttatgtt cagaaagct aagaaaccca 180
 cctcttgaga ggtcagtaaa gaggaattaa tatttcatat ctacaaactg accacaggat 240
 tggatacaga acgaggtt2 tcttgataa ctccagagct agtacttgc vgggggccc 300
 t.cga 305

<210> 44
 <211> 852
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(852)
 <223> n = A,T,C or G

<400> 44
 acat881at cagagaaag tagtctttga aatattttag tccaggagtt ctttqttct 60
 gattatttgg tgtgtgttt ggtttgtgt caaagtattg gcagcttcag ttttcatttl 120
 ctctccatcc tggggcatc ttcccaatt tatataccag tcttcgtcca tccacargct 180
 ccagaatttc tctttttag taatatctca tagctcggt gagctttca taggtcatgc 240
 tgcgttgtt cttctttta ccccatagct gagcactgc ctctgattc aagaaactga 300
 agacgctct agatcggtct tcccatttta ttaactctgg gttcttgtct gggctcaga 360
 ggatgtcgg gatgaattcc cataagttag tccctctcgg gtttgtgttt ttggtgtgg 420
 acttggcag ggggtcttgr tctttttca tatcaggtag ctctgcaca ggaaggtgac 480
 tgggtgtgt catgagatc tgagccggc agaaagtatt gctgtccac aaatctach 540
 tgtaccata gttggtgtca tctaatagt cctngtctt ccaagtgtc atgatggaag 600

```

getcagtttg ttcagtccttg acaatgarat tgtgltgtga ctgggaacagg tcartactgc      660
actgggcgll ccacttcaga tgcctgcagg tgcctgtagag gaagtcgccc gccatccctg      720
ccgcgcgggt gaactcctgc aaactcatgc tgcgaaggtg ctgcgcgttg atgtcgaaat      780
cntggaaagg gatcaattg gcatccagct gtttgggtgc caggaggtga tggagccact      840
cccaacctg gt                                     852

```

<210> 45
 <211> 234
 <212> DNA
 <213> Homo sapien

```

<400> 45
acaaacagacc cttagctgct aacgacctca tgcctcatca gttggacgaa tccgtgtccy      60
agtcctgacac catccggagc atcagcaltg cttegcagtg cctaccgcy gggaaactct      120
gctctgtttc tggctgggt ctgctggcga acggcagaat gccaccgtg ctgcagtgcc      180
tgaacgtgtc ggtggtgtct gaggaggtct gcagttaagt ctatgaccg ctgc      234

```

<210> 46
 <211> 590
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(590)
 <223> n = A,T,C or G

```

<400> 46
actttttatt taaatgttta taaggcagat ctatgagaat galagaaac atgggtgtgt      60
atttggatagc aatatttttg agattacaga gttttaglaa ctaccaatta caacgttaaa      120
aagaagataa tatattccaa gonnatacaa aatatctaat gaaggatcaa ggcaggaaaa      180
tgantataac taattgacaa tggaaatca attttaattt gaattgcaca ttatctttta      240
aaagctttca aaaaeeenaa ttattgcagt ctanttaatt caaacagtyt taaatgggat      300
caggataaan aactgaagg canaeegaat taattttcac ttcatgtaac ncauccanat      360
ttacaatggc ttaaatgc an ggaanaagca gtggaagtat ggaaglaato aaggtcttct      420
tggctctcaa totgccttac tctttgggtg tggctttgat cctctggaga cagctgccag      480
ggctctgttt atatccaca tcccagcagc aagatgaagg gatgaaaag gacacatgct      540
gccttcttct gaggagactt catctcactg gcaacactc agtracatgt      590

```

<210> 47
 <211> 774
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(774)
 <223> n = A,T,C or G

```

<400> 47
acaaagggggc ataatgaagg agtggggana galtttaag aagggaaaaa aacgagggccc      60
tgaacagaaat ttctctgnac aacgggggtt caaaataatt ttcttgggga gattcaagac      120
gcttcactgc ttgaacctta aatggatgtg ggaannatt ttctgtaatg accctgaggg      180
cattacagac gggactctgg gaggaaaggt aaacagaagg gggacaaagg cttautccaa      240
aacatcaagg aaaggaggtt aggttcatac ctccuagcct acacagttct ccagggtctt      300

```



```

cctcattcccl: ggaaggacgac agtggaggga ccaatgacca tgcacccagg ctccctgctg 360
ctggctcctg gtcttcagcc cccagctctg gaagccccc ctctgctgat cctgcgtgga 420
ccacactccl: tgaacacaca tccccagggt ctctctctgg acatggctga acctcctall 480
cctacttccg agatgccttg ctccctgcag cctgtcaaaa tcccaactcar cctcccaacc 540
acggcatggg aagcctttct gacttgcttg attactccag catcttggaa caatccctga 600
ttccccactc cttagaggga agatagggtg gtttaagagta gggctggacc acttgagacc 660
aggtctgctg cttcaacttc tggtcatttt acgagctatg ggaccttggg caagtactct 720
tcaattctat gggctcatt tctttctacc tgcacaaatgg gggataataa tagt 774

```

```

<210> 48
<211> 124
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{124}
<223> n = A,T,C or G

```

```

<400> 48
cannaaattga aatttttataa aaaggcattt tctctctata tccataaaa. gatataattt 60
ttgcaantat anaantgtgt cataaattat aatgttcctt aatlaucagct caacgcaact 120
tggt 124

```

```

<210> 49
<211> 147
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{147}
<223> n = A,T,C or G

```

```

<400> 49
gcugatgcta ctatcttatt ggaaggaggtg ggggtgtctt tattattctt tcaucagctt 60
tgtggctaca ggtggtgtct gactgcatna aaaaattttt tccgggtgat tgcacaaact 120
ttagggcacc cactcccaa gcaantgt 147

```

```

<210> 50
<211> 107
<212> DNA
<213> Homo sapien

```

```

<400> 50
acattaaatt aataaaggga ctgttggggg tctgtcaaaa cacatgggct gatataattgc 60
atgggttgag gttaggagga gttaggcata tgttttggga ggggggt. 107

```

```

<210> 51
<211> 204
<212> DNA
<213> Homo sapien

```

```

<400> 51
gtcctaggga gtctaggagg cacacgactc tgggttcacg ggggcacac acttgacagg 60

```

cgggaaaggaa aggcagagaa glacacacgt caggggggaa tyacagaaag gaaatcaag	120
gccttgcaag glcaagaaag ggactcaggg cttccaccac agccctgccc uacttggcca	180
cctccctttt gggaccagca atgt	204

<210> 52
 <211> 491
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{491}
 <223> n = A,T,C or G

<400> 52	
acaaagataa cclttatctt ataaccaaaa ttgatagctt ttaaaggltt gtattgtgta	60
gggtatcttt caaaagacta aagagatanc tcaggtaaaa agttggaat gtatanaaca	120
ccatcagaca ggttttttaa aaacaacata ttacaaatt agacaatcat cttaaaaaa	180
aaaactctct gtatcaattt ctttcttton aatgactga ttatattatt ttttaattt	240
tcanaaacac ttcttcaaaa attttcaana tggtagcttt canatgtnc ctcagtccca	300
atgttgcttc gatnaataaa tctcgtgaga acttaccacc caccacaagg tttctggggc	360
atgcaacagt gtcttttctt tttttttct tttttttt ttacaggcac agaaactcat	420
caattttatt tggataacaa aggtcttcca aatttatatt aaaaataat ccaagttcat	480
atcctcttg t	491

<210> 53
 <211> 484
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{484}
 <223> n = A,T,C or G

<400> 53	
acataattta gcagggtcctt ttaaccataag atgctattta ttaanaggtn tatgatctga	60
gtattaarag ttgctgaagt ttggatattt tatgcagcat ttctcttttg ctttgataac	120
actacagaa ccttaaggac actgaaaatt agtaagttaa gtacagaaac attagtgtct	180
caatcaaatc tctacataac actatagtta ttaaacgctt aaaaaaaagt gttgaaatct	240
gcactagtat anaccgctcc tgcaggata anactgctt ggacagaaa gggaaaanaac	300
agctttgank ttctttgtgc tgaataggag aaaggctgaa ttaccttgtt gctctccct	360
aatgattggc aggtcnggtt aatnccaaaa catatcccaa ctcaacactt cttttccnag	420
tancctgant ctgtgtattc caggancagg cggatggaat gggucagccc ccggaatctt	480
cant	484

<210> 54
 <211> 151
 <212> DNA
 <213> Homo sapien

<400> 54	
actaaacctc gtgcttgta actccatata gaaaacggty cctccctga acacggctgg	60
ccactgggtt tactgtgac aacgcacac acaaaaacac aatccttg cartggctag	120
tctatgtct ctcaagtgc tttttgttg t	151

<210> 55
 <211> 91
 <212> DNA
 <213> Homo sapien

<400> 55
 acctggcttg tctccgggtg gttcccgagg ccccccacgg tcccaagAAC ggaacattc 60
 gccctccagt ggatactcga gccaagtggt t 91

<210> 56
 <211> 133
 <212> DNA
 <213> Homo sapien

<400> 56
 ggccggatgtc cgttgggttat atacaatat gtcatttlat gtaagggact tgaatatact 60
 tggatttttg gtatctgtgt gttgggggga cggctcagga accaataacc catggatacc 120
 aagggaacac tgt 133

<210> 57
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(147)
 <223> n = A,T,C or G

<400> 57
 actctggaga acctgagcgc ctgctccgcc ttggggatga ggtgatgcan gcnctggcgc 60
 gactgggagc tgagcccttc cctttgcgcc tgcctcagag gattgttgcg gaentgcana 120
 tctcantggg ctggatncat gcagggt 147

<210> 58
 <211> 198
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(198)
 <223> n = A,T,C or G

<400> 58
 acagggatat aggttttag ttattgttat tgcacaatan attgaatttt ctgtatactc 60
 tgattacata catctatcct tcaaaaaga tgtaatctt aatttttatg ccactctatc 120
 atttacat gatttacctt gtaaatgaga agtcatgata gcaactgaatt tcaactagtt 180
 ttgatttcta agtttgtgt 198

<210> 59
 <211> 330
 <212> DNA
 <213> Homo sapien

atcaacaaatg	ggttgtcgagg	aagtccttctc	agcaaaacclg	gtgatggcta	ctgaaaagat	60
crattgaaaa	ttatcattaa	tgatttttaa	tgcacagttc	tcacaaactc	actcaatttt	120
cacctgtgct	agcttgctaa	aalggggagt	aactctagag	caatatagt	atcttctgaa	180
tcragtcaat	aaatgacaaa	gccagggcct	acaggtgggt	tcacgaattt	ccagaccuag	240
cagaaaggat	ctattttatc	acatggatct	ccgtctgtgc	tcaaaatacc	tcatgatatt	300
tttgcctctt	atlggaattc	tttgaagagt				330

```
<210> 60
<211> 175
<212> DNA
<213> Homo sapien
```

accgtgggtg	ccttctacat	tctgacggc	tcttccacca	acacctggtt	ctacttggc	60
gtcgtgggt	ccttctctt	cactctcctc	cagctgggtg	tgtctatcga	ctttggcgc	120
tcttggaaac	agcgggtggt	gggcaaggcc	gaggagtgcg	attccgtg	ctggc	175

```
<210> 61
<211> 154
<212> DNA
<213> Homo sapien
```

```

aacccacttt  tcttctgttg  agcagtctgg  acttctcaet  gctacatgat  gaggggtgagt      60
ggttgttgct  cttnaacagt  atcttccctt  ttccggatct  gctgagcagg  acagcagtgcc     120
tggactgcac  agccccgggg  ctccacattg  ctgt                                     154

```

```
<210> 62
<211> 30
<212> DNA
<213> Homo sapien
```

eggeteggen: statagttag tegtattag 30

```
<210> 63
<211> 89
<212> DNA
<213> Homo sapien
```

```
acaagtccct tuagcaccct ttgcctctca aactgacca tcttttata. ttaatgcttc      60
ctgtatgaat aaaaatggtt atgtcaagt                                     89
```

```
<210> 64
<211> 97
<212> DNA
<213> Homo sapien
```

ACCGGGAGTGA CTGAGTGGGG ACCTGTGATC TGAATCAGCC AATAAATAGA GGTCTGCG 60
 ATCAGTGCA CCGAGGATTG GTCCCTGGGC CTGGGGT 97

<210> 65
 <211> 377
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (377)
 <223> n = A,T,C or G

<400> 65
 acaacaanaa nt.ccccttctt taggcccactg atgggaacact ggaacccccc tttgatggca 60
 gcctggcgct ctaggccttg acacagcggc tgggggtttgg gctntcccaa accgcacacc 120
 ccaacccctgg tctacccaca ntcttggtta tgggctgtct ctgcactga acatcagggc 180
 tggglcataa natgaaatcc caagggggac agaggtcagt agaggaagct caatgagaaa 240
 ggtgctgttt gctcagccag aaaaacagctg cctgguatcc gccgctgaa tatgaacccg 300
 tgggggtttaa ctacccccc gaggaatcat gcttgggcga tgggaagggt ccaacaggag 360
 gggcgggagg agcctgt 377

<210> 66
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 66
 agccctttcc ctacgaattc agggaaagaga ctgtcgactg ccttctctcg ttgttgctg 60
 agaacccgtg tggcccttcc caacatatac accctcgctc catctttgaa ctcaaacang 120
 aggaactaac tgcacccctgg tctctctccc agtccacagt tcaacctcca tccctcagct 180
 tctctcactc taagggatct caacactgcc cagcacaggg gccctgaatt tatgtggttt 240
 ctatatattt tttaataaga tgcactttct gtcaattttt aatcaagctc gaagaattac 300
 tgttt 305

<210> 67
 <211> 385
 <212> DNA
 <213> Homo sapien

<400> 67
 actacacaca ctcaacttgc cctctgtgaga cacttttgtcc cagcacttta ggaatgetga 60
 ggtcggacca gccacatctc atgtgcacga ttgcccagca gacatcaggt ctgagagctc 120
 ccttttttaa aaaggggact tggcttaaaaa agaagctctag ccargatctg ctgagcagc 180
 tgtctgtgtc tggagattca cttttgagag agttctctc tgaagacctga tctttagagg 240
 ctggggcgctc ttgcacatga gatggggctg gtctgatctc agcactcctt agtctgcttg 300
 cctctccag ggcaccagcc tggccacac ttgcttacagg gcaactctag atgcccatc 360
 catagtttct gtgctagtgg accgt 385

<210> 68
 <211> 73
 <212> DNA
 <213> Homo sapien

<400> 68
 acttaacag atatatcttt accccagatg gggatcttct ttgtaaaaa tggaaataaa 60
 gtttttttaa tgg 73

<210> 69
 <211> 536
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)... (536)
 <223> n = A,T,C or G

<400> 69
 actagtccag tgtggtagga ttccattgtg ttgggggctc tcacctctct ctctgcagc 60
 tccagctttg tgccttgct ctgaggagac catggtccag catctyagta ccttgctgct 120
 ootgctggcc accctagctg tgggucctggc ctggagcucc agggaggagg ataggataat 180
 cccgggtggc alctatnuc cagacctcaa tcatgagtag gtacagcgtg ccttccactt 240
 cyccatcagc aggtataana aggcaccua agatgactac tucagacgtc cyctgctggg 300
 actaagagcc aggcaccua ccttggggg gytgacttac tctctcagc tagaggtggg 360
 ccgaccctc tgtaccaagt cccagccca ctggagcacc tgtgcttcc atgaccagcc 420
 agaactgcag aagaccagc tgtgctctt cagagctctac gaggctcct ggggagacc 480
 gaaggtcctt ggtgaaatc caggtgtcaa gaaatctan ggatctgtt ccaggc 536

<210> 70
 <211> 477
 <212> DNA
 <213> Homo sapien

<400> 70
 atgaccctc accggggccc tctcagccct cctaattgac tcgggtctag cctgtgtgatt 60
 teacttccac tccctcagc tctctatct aggcctacta acccaccac taccatata 120
 ccabtgatgg ccgctgttaa caggagaaag cactatccac ggcaccaca caccacotgt 180
 ccacaaaggc ctctgatcag gataatctt atttattacn tcagaagtlt tttctctgc 240
 agggatctt ctgagcttt tactacctca gcttagcccn taccuccaa ctaggagggc 300
 actggccccc aacaggctc accccgttaa atccctaga agtccactc ctacacacat 360
 ccgattactc cyctcagga gtatcaatc cctgagctca ccatagctc atagaccac 420
 accgaaccca aattattcaa agcactgtt attcacaatt tactgggtct ctatctt 477

<210> 71
 <211> 533
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (533)
 <223> n = A,T,C or G

<400> 71
 agagctatag gtacagtgtg atctcagctt tgcacacaca ttttctacat agtagtact 60
 aggtattaat gtatatgtaa agcaccacat cacaccatta ataatggtaa gcltggttta 120
 tgtgatttta gtggtatttt tggcaccctt atatatgttt tcccaacttc cagcagtgat 180
 attatttcca taacttaaaa agttaggttg aaaaagaaaa tctccagcaa gontctcatt 240
 taataaagg tttgtcatct ttaaaaatc agcaatattg gactttttta aaaagctgtc 300
 aactagggtg gacccactc atcattatta gaalacatt taasaacatc ggtacctca 360
 agtcagtttg ccttgaaaa tatcaaatat aactcttaga ghaatgtaca taagaagatg 420
 ctctgtuatt ttggagtang aggttccctc ctcaactttg tatcttcaa aggtacatgg 480
 taacaaaaaa ccttcacac agtatataag gctgtaaaat ggggaattct gcc 533

<210> 72
 <211> 511
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(511)
 <223> n = A,T,C or G

<400> 72
 tatctacggga aaacacacca cataattcaa ctanccanaga anactgcttc agggcgtgta 60
 aatgaaagg ctccaggca gttatctgat taaagaacc taaagaggga acaaggctaa 120
 aagccgcagg atgtctacac tatancaggr gctatttggg ttggctggag yagctgtgga 180
 aacatggan agattggtgc tgganacgc cgtggctatc cctcattgtt attacanagt 240
 gaggttccct gtgtgcccac tggtttgaaa accgtttctnc aataatgata gaatagtaca 300
 cacatgagaa ctgaaatggc ccaaccuccg aaagaaagcc caactagatc ctacagannac 360
 gcttctaggg acaataaccg atgaagaaaa galggcctcc ttgtgcccc gtctgttatg 420
 tttctctccc attgragcna naaccctgtt ctctcaagca aacnucagtg atgatggcna 480
 aatataccc cctcttgag nacnaggagg a 511

<210> 73
 <211> 499
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(499)
 <223> n = A,T,C or G

<400> 73
 cagtgcacgc actggtgcaa gtaccagtac caataaccgt gccagtgcca gtgcacagcac 60
 cagtggatggc ttcagtgctg gtgcccagccu gacggccact ctacatlttg ggcctcttgc 120
 tggccttggg ggagcaggat ccagcaccag tggcagctct ggtgcctgtg gtttctccta 180
 caagtgaat tttagatatt gttaatcctg ccagtcttcc tcttcaagcc aggggtgcac 240
 ctacagaaac tactcaacc agcaactctg gcagccacba tcaatcaatt gaagttgaca 300
 ctctgcatta atctatcttg caatttctga aaaaaaanaa aaaaaaaggg cggcgcctng 360
 antctagagg gcccgcttca acccgctgat cagcctcgac tgtgccttct anttgcacgc 420
 catctgttgc ttgcacccc ccggtgctt tcttgaccc tggcaagtgc cactccnact 480
 gtctttctt aattaaaat 499

<210> 74
 <211> 537
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(537)
 <223> n = A,T,C or G

<400> 74
 tttcataggg gaaacactg agagatact tgaagaattt ggattcagcc gcaagagat. 60

```

ttatcaggtt: aactcagata aaatcattga agtcaatag gtaaaagcta gtctctaact 120
tcagagccca cggctcaagr gaatttgaat actgcattta cagtgtagag taacacataa 180
catctgtatgc atggaaacat ggaggaaacag talctacagt tcttaccact ctatcaaga 240
aagaattac agactctgat tclacagtga tgattgaatt claaaaatgg taatcattag 300
ggcttttgat ttatcaatct ttgggtactt atactcaatt atggtagtla tactgcctt: 360
cagtttgott gatataattg ttgacattaa gattcttgac ttatattttg aatgggttct 420
actgaaaaan gaatgatata ttcttgaaga cctcgaata catttattla cactcttgat 480
tutacatgt agaaaatgaa ggaatgccc caaatgtat ggtgatataa gtcccg 537

```

<210> 75

<211> 467

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(467)

<223> n = A,T,C or G

<400> 75

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caaanacaat tgttcaaaag atgcaaatga tacaactactg ctgragctca caaacacctc 60
tgcattctac acgtacctcc tctgtctct caagttagtgt ggtctctttt gccatcacta 120
cctgctgtct gcttagaaga acggtttct gctgcaangy agagaaatca taacagacgg 180
tggcacaagg aggcacatct tctctcatcg gttattgtcc ctagaagcct ctcttgagga 240
tctagtggg cttctcttct gggtttgggc catttcanll ctcatgtgtg tactattcta 300
tcattattgt ataacggctt tcaaaccngt gggcacncag agaacctcac ttgtataaa 360
caacggaggaa tagccacggg gatctcagc accaatctc tccatgttnt tccagagctc 420
ctcragcraa cccaatagc cgtctctatn gtgtagaaca tccctgn 467

```

<210> 76

<211> 400

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(400)

<223> n = A,T,C or G

<400> 76

```

aagctgacag catcgggccc gagatgtctc gctccgtggc cttagctgtg ctccgctac 60
totctcttcc tggcctggag actatccagc gtaactccaa gattcaggtt tactcaagtc 120
atccagcaga gaattggaaag tcaaatllcc tgaattgcta tglgtctggg ttctatccat 180
ccgacattga agttgactta ctgaagaatg gagagagcat tgaaaaagtg gagcattcag 240
acttgtcttt cagcaaggac tggctttct atctcttgta ctavactgaa ttacccccc 300
ctgaaaaaga tgaatgtgac tgcctgtgga acuatgtgar ttgtctcacg cccagatng 360
tttagtggga tganacatg taaycagcan catggggggt 400

```

<210> 77

<211> 248

<212> DNA

<213> Homo sapien

<400> 77

```

ctggagtgcc ttggatcttc agcccttgc agnagcaga atgcaattc ttaggcacct 60

```


ccagctgccc	cgccggggga	tgcgaggctc	ggagcaccct	tgccgggctg	tgattgctgc	120
caggcactgt	tcatccagc	ttttctgtcc	ctttgctccc	ggcaagcgct	tctgtgaaa	180
gttcattctc	ggagctgat	gtcttaccga	ataaaggctc	catgctccac	ccgaacaaan	240
aaaaaaaa						248

<210> 78
 <211> 201
 <212> DNA
 <213> Homo sapien

<400> 78	
actagtcacg	tgtgggtgga
ttccattgtg	tctgggcccc
cacaatggct	acctttaaca
60	
tcacccagac	cccgccctgc
cngtgcctca	cgtgctgctt
aacgacagta	tgatgcttac
120	
tctgctactc	ggaaacctct
tttatgtaac	taatgtatgc
ttctctgttt	ataaatgctt
180	
gatttcacaa	aaacaaaaaa
a	
201	

<210> 79
 <211> 552
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (552)
 <223> n = A,T,C or G

<400> 79	
tctttcttgt	aggtctttga
gacaacccctc	gcctcaaac
gtgtcacaga	cttctgaatg
60	
tttaggcagt	gctagtaall
tcctcgtaac	gattctgtta
ttactttctc	atctcttact
120	
cctctttctt	ctgaagatta
atgaagttgc	aaattgaggt
ggataaatcc	aaaaaggtag
180	
tgtgatagta	taagtatcta
agtgacagtg	aaagtgtgtt
atatatatac	attcaaaatt
240	
atgcaagtta	gtaattactc
agggttaact	aaattccttt
aatatgctgt	tgaaactart
300	
ctgttccttg	gctagaaaaa
atctataaca	ggactttgtt
agtttyggaa	gccaaattga
360	
taatatctta	tggttataaa
gttgggctat	acataaanta
tnaagaaata	tgggaattta
420	
ttcccaaggaa	tatgggggtc
atttatquat	antccccggg
anagaagttt	tgantnaaac
480	
cngttttggg	taatacgtta
atatgtcttn	aatnaacaa
gcntgactta	tttccaaaaa
540	
aaaaaaanaa	aa
552	

<210> 80
 <211> 476
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (476)
 <223> n = A,T,C or G

<400> 80	
acagggattt	gagatgctaa
ggccccagag	atcgtttgat
ccaacccctc	tattttcaga
60	
ggggaaaatg	gggcctagaa
gttacagagc	atctagctgg
tgggctggca	ccnctggcct
120	
cacacagant	ccggagttagc
tgggactaca	ggccacacag
cactgaagca	ggccctgttt
180	
gcaattccag	ttgccacctc
caacttaaac	attcttcata
tgtgatgtcc	ttagtcacta
240	
aggttaaac	ttcccaacca
gaaaaggcaa	cttaagataaa
atcttagagc	actttcatac
300	
tcttttaagt	ccttttcag
cctccctctg	agtcctcctt
gggggttgat	aggaantctc
360	

tcttgggttt. ctcaataaaa tctctatcna tctcatgttt aatttgggtac gcntaaaaat. 420
 gctgnaaaaa ttaaatgtt clggtttcnc ttaaaaaaa aaaaaaaa 476

<210> 81
 <211> 232
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(232)
 <223> n = A,T,C or G

<400> 81
 tttttttttg tatgcctctn ctgtggngtt attgttgetg ccacccctgga gggagccaggt. 60
 ttcttttgtt tttttttttt ctggggggatc ttcttgggtc tggccctcra ttcctcagcct 120
 ctcatcccca tcttgcattt ttgttagggg tggagggcgt ttcttggtag cccctcagag 180
 acccagtcag cgggaataag tccctaggggt ggggggtgtg gcaagccggc ct 232

<210> 82
 <211> 383
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(383)
 <223> n = A,T,C or G

<400> 82
 aggcgggagc agnagctaaa gccaaagccc auyaaagagtg gcagtgcag cactgggtgac 60
 agtaccagta ccaataacat gcccagtgcc gtgccagcac cagtggtygc ttcatgtgtg 120
 gtgccagcct gaccccaact ctacatttg ggttcttcgc tggccttggt ggagctgggtg 180
 ccagcaccag tggcagctct ggtgcccgtg gtctctccta cagtgagat tttagatatt 240
 gttaattctg ccagttctt tttcaagcc aggytgcatc ctcaaaacc tactcaaac 300
 aguaactctg ccagcacta tcaatcaatt gaagttgaca ctctgcatta aatctatttg 360
 ccatttcana aaaaaaaa aaa 383

<210> 83
 <211> 494
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(494)
 <223> n = A,T,C or G

<400> 83
 accgaatttg gacgctggc ttctagcga tcatgtcttc cagtattacc tcaeragaga 60
 gggagatcga gtctatacgc tgaagaaatc tgaucagatg ggacaacaga cctgtctcagc 120
 ccatacctgt cgtttctccc cagatgaca atactctcga caccgaatca ccatcaagaa 180
 acgcttcaag gtgtcctga ccagcaacc ggcuccgtgc ctctgagggg ccttaactg 240
 atgtcttttc tgcraactgt taucuccctgg agactccgta accaaactct tcggactgtg 300
 agccctgatg cctttttgac agccatactc tttggcctcc agtctctcgt ggcgattgat 360

catgcttctg	tyagggcaatc	atggtggcat	cacccatnaa	gggaacacat	ttgatttttt	420
tttncatcat	tttaaatcac	naccayaatc	nttcagaatc	atggaattga	aaaactctta	480
aaaaaaaaaa	aaan					494

<210> 84
 <211> 380
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(380)
 <223> n = A,T,C or G

<400> 84	
gctggtagcc	60
atgtatctgc	120
gaggaatgg	180
gcacacccctc	240
gtgctgctcc	300
ccatgttcag	360
agcgttccgc	380

<210> 85
 <211> 481
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(481)
 <223> n = A,T,C or G

<400> 85	
gagttagctc	60
tnccatcgtc	120
ggaaactctc	180
tgtgaaagga	240
gtcgaattctg	300
ctatcatger	360
ccagattctg	420
aaagaacacc	480
t	481

<210> 86
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(472)
 <223> n = A,T,C or G

<400> 86

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aacatcttcc tgtataatgc tgtgtaatat cgatccgacn ttgtctgctg agaatccatt    60
aattgggaaa gcaacttnaa ggcctgggccc tggattttaa attcacaala tgcacactt    120
taaacagtgt gtcacalcgc tocttactt tgtcatcac agtctgggaa taagggtatg    180
ccctattcac acctgttaaa agggcgclaa gcatttttga tcaacaccl ttttttttga    240
cacaagtcgg aaaaaaggcaa agtataacag ttnttaattl gttagcaaat tcactttctt    300
catgggacag agccatttga tttaaaaagg aatttcgata atattgagcl ttgggagctg    360
atatntgagc ggaagantcg ctttcttact taccagaga caactccctt catattggga    420
tgttuacnaa agtcatgtct cttacagatg ggtatgtttt gtggcaattc tg          472

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<210> 87
<211> 413
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(413)
<223> n = A,T,C or G

```

```

<400> 87
agaaaccagt atctctnaaa ccacccctct ataccttgct gacctaatct tgtgtgagtg    60
tgtgtgtgct cgcattatct atagacaggc acatcttttt tacttttgta aaagattatg    120
ctctcttggg atcttatctt gtgaaaattt taatgatctg ccatcatgtc ttggggacct    180
ttgtcttctg tglaaatggt actagagaaa acacctatct tatgagtcac tctagttngt    240
tttattcgac atgaaggaaa tttccagatn acnacactna caaaccttcc cttgactagg    300
ggggacaaag aaaaagcanaa ctgaacatna gaaacaattt cctggtgaga aattttcataa    360
acagaaactt ggtngtatat tgaaanang catcattnaa acgttttttt ttt          413

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<210> 88
<211> 448
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(448)
<223> n = A,T,C or G

```

```

<400> 88
cgcagcgggt cctctctatc tagctccagu ctctcgcttg ccccactccc cgcgtccgcg    60
gtcctagccn accatggcgg ggccttgcgg cgcctcgctg ctctgtgtgg ccactcctggc    120
cgtggccttg gccgtgagcc ccgcggcgcg ctccagtcct ggcaagccgc cgcgcctggt    180
gggagggcca tgyaaccgcg gtggaagaag aagggtgtgc gctgcaactg gactttgctg    240
tcggcnanta caacaaaccc gcaacnactt ttaccnagcn cgcgtgagcg gttgtgcgcg    300
cccaancaaa ttgttactng gggtaantaa ttcttgyaag ttgaacctgg gucnaacnng    360
tttaccagaa ccaagccaat tngaacaatt nccctccat aacagccctt tttaaaaagg    420
gaanvanteo tgnctctttc caaatttt          448

```

```

<210> 89
<211> 463
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

```

<222> (1)...(463)

<223> n = A,T,C or G

<400> 89

gaattttgtg	cactggccac	tgtgatggaa	ccattgggac	aggtatgcttt	gagtttatca	60
gtaagtattc	tgcuaaggtt	ggtgttgraa	catgaatag	taaaatglaa	aaatttagc	120
agaggtctag	gtctgcatac	caggagacag	tttgtcngtg	tattttgtag	ccttgaagtt	180
ctcagtgaca	agtttmttct	gatgcgaagt	lctnattcca	gtgttttagt	cccttgcatc	240
tttnatgtn	agacttgcc	ctntnaaatt	gcttttgnt	tctgcaggta	ctatctgttg	300
tttaacaaa	tagaannact	tctctgcttn	gaanatttga	atacttaca	cttnaaaatn	360
aattctctcc	ccatannaaa	acccangccc	ttggganaat	ttgaaaaang	gntccttern	420
aattcnnana	anttcagntn	tcatacaaca	naavigganc	ccc		463

<210> 90

<211> 400

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(400)

<223> n = A,T,C or G

<400> 90

agggattgaa	ggtctntnt	actgtcggac	tgttoancca	ccaactctac	aagttgctgt	60
cttccartca	ctgtctgtac	gcctnttaac	ccagactgta	tcttctataa	tagaacaaat	120
tcttccaccag	ccacatcttc	taggaccttt	ctggattcag	ttagtataag	ctcttccact	180
tcctttgtta	agatttcac	tggtaaaagt	cttaagtttg	tggaaaggaa	tttaattgct	240
cgttctctaa	caatgtcttc	tccttgaagt	atttggctga	acaacccacc	tnaagtcctt	300
ctgtgcaccc	attttaaata	cacttaatag	ggcattggtn	cactaggtta	aattctgcaa	360
gagtcacttg	ctgtgcaaaag	ctgcgttagt	atctctgcca			400

<210> 91

<211> 480

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(480)

<223> n = A,T,C or G

<400> 91

gagctoggat	ccaataatct	ttgtctgagg	gcagcanaca	tatncagtgc	catggnaact	60
ggtctacccc	acatgggagc	agcatgcngt	agntatataa	ggtcatbccc	tgagtcagac	120
atgcctcttt	gactaccgtg	tgcagtgct	ggtgatcttc	acacacctcc	nnccgctctt	180
tgtggaaa	ctggcacttg	ncctggaa	gcaagacatn	acttacaat	tcacccacga	240
garacttgaa	aggtgtaaca	aagcgactct	tgcattgctt	tttgtccctc	cggcaccagt	300
tytcaatact	aaccgctgg	cttgcctcca	tcacattgtt	gatctgttagc	cttggataca	360
tctcctgaca	gtactgaaga	acttcttctt	ttgtttcaaa	agcaactctt	ggtgctgttt	420
ngatcagggt	ccatttccc	agtcogaatg	ttcacatggc	atatnttact	tcccacaaaa	480

<210> 92

<211> 477

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(477)

<223> n = A,T,C or G

<400> 92

ataaagccca	natcccaccc	agaagatgag	cttgttgact	gagaacctga	tggggtcact	60
ggtcacgctg	tgcacccagc	gactctccac	ctgctggagc	cggttgatgc	tgcactccct	120
ccaaagcagg	cagcagcagg	gocggtrcat	gaactccact	cgtgggtctg	ggttgacggt	180
taantgcagg	aagaggctga	ccacctcgag	gtccacnagg	atgcccgaat	gtgcgggacc	240
tgcagcgaaa	ctcttcgagc	gtcatgagcg	ggagagcgat	gagcccgagg	gacctgcccc	300
gaaccttcag	ctgtttctct	ggcgccacat	gcagctgctg	ccgctnacac	tgggctcggg	360
accaggggac	aaacggcggt	gaacagcgcg	acctcaagga	tgcacantgt	gtgcgctccc	420
aggaacgggc	ccagcgtgtc	caggtccatg	tgggtgaanc	ctccgcgggg	aattggcg	477

<210> 93

<211> 377

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(377)

<223> n = A,T,C or G

<400> 93

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ugcctcaatg	cagaaccant	agtgggagca	ctgtgtttag	agltacagag	gaacactgtg	180
tgaatttact	tgggaatttc	ctctgttata	tagcttttcc	caatgctaat	ttccaaacaa	240
caacaacaaa	ataacatgtt	tgcctgttnc	gttgtataaa	agtangtgat	ctgtatnta	300
aagaaaatal	tactgttaca	tatactgttt	gcaanttctg	tattcattgg	tnctctggaa	360
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<210> 94

<211> 495

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(495)

<223> n = A,T,C or G

<400> 94

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ccaaggaaag	accacattct	ggggacatgg	gctggaggac	aggacctaga	ggvaccaagg	180
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tguagctca	ccaaaggtcc	ctctcagtc	cttccctaca	ccctgaacgg	ncactggccc	360
acacccccc	agancancca	cccgcacatg	ggaatglnct	caaggaaatc	ungggcaang	420
tggactctng	tccnnnaagg	gggcagaatc	tccantagan	gganngaac	cttgcctana	480

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495

<210> 95
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 <212> DNA
 <213> Homo sapien
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 <222> {1}... (472)
 <223> n = A,T,C or G

<400> 95
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 tagctgtttt gaggctgatt gcacactctg accacaactc aatctgaaaa ctatttnact 180
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 atcggcgaag tgtggagtgt atgtttcttt cacagtaata tatgcctttt gtaacttcac 360
 ttggttattt tatctgtaaat gaattacaaa attcttaatt taagaaatg gtangttata 420
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<210> 96
 <211> 476
 <212> DNA
 <213> Homo sapien
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 <221> misc_feature
 <222> {1}... (476)
 <223> n = A,T,C or G

<400> 96
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 gcaggtaact ctccagaaaa acngacaggg caggcttgca tgaaaaagtn acatctgcgt 420
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<210> 97
 <211> 479
 <212> DNA
 <213> Homo sapien
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 <222> {1}... (479)
 <223> n = A,T,C or G

<400> 97
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caatcgcaaa	tcaaaactca	caagtgcaca	tctgttgta	atttagtgta	ataagactta	180
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gtgattatna	aatatctcuc	aaatttcact	ctacutgct	atragcagcl	agaaaaacet	360
ntttttttta	natcaaatga	ttctgtgttt	ggaantgttn	aaatgaaatc	tgaatgttgg	420
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<210> 98

<211> 461

<212> DNA

<213> Homo sapien

<400> 98

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ttacctggag	aaaagaggct	ttggctgggg	accatcccat	tgaaacctct	ctt.aaggaat	360
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<210> 99

<211> 171

<212> DNA

<213> Homo sapien

<400> 99

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cgggtgagaa	agccttctct	agcgatctga	gaggcgtgoc	ttgggggtac	c	171

<210> 100

<211> 269

<212> DNA

<213> Homo sapien

<400> 100

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aaggctgagc	tgaagccgca	gaggctcgtg	cacgtcccau	gacattgacg	ccgtcgggga	180
cagccgggac	agagcccggt	gaagcggggg	gcctcgggga	gccccctcgg	aagggcggcc	240
cgaagagatac	gcaggtgcag	gtggccggc				269

<210> 101

<211> 405

<212> DNA

<213> Homo sapien

<400> 101

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<210> 102
 <211> 470
 <212> DNA
 <213> Homo sapien

<400> 102						
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<210> 103
 <211> 581
 <212> DNA
 <213> Homo sapien

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gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggtct	ctttcctaaa	360
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 <211> 578
 <212> DNA
 <213> Homo sapien

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<210> 105
 <211> 538
 <212> DNA

<213> Homo sapien

<400> 105

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<210> 106

<211> 473

<212> DNA

<213> Homo sapien

<400> 106

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<210> 107

<211> 1621

<212> DNA

<213> Homo sapien

<400> 107

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<210> 108

<211> 382

<212> PRT

<213> Homo sapien

<400> 108

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35 40 45
Gly Lys Arg Ser Leu Val Leu Asp Leu Lys Gln Pro Arg Gly Ala Ala
50 55 60
Val Leu Arg Arg Leu Cys Lys Arg Ser Asp Val Leu Leu Glu Pro Phe
65 70 75 80
Arg Arg Gly Val Met Glu Lys Leu Gln Leu Gly Pro Glu Ile Leu Gln
85 90 95
Arg Glu Asn Pro Arg Leu Ile Tyr Ala Arg Leu Ser Gly Phe Gly Gln
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Ser Gly Ser Phe Cys Arg Leu Ala Gly His Asp Ile Asn Tyr Leu Ala
115 120 125
Leu Ser Gly Val Leu Ser Lys Ile Gly Arg Ser Gly Glu Asn Pro Tyr
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Ala Pro Leu Asn Leu Leu Ala Asp Phe Ala Gly Gly Gly Leu Met Cys
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Ala Leu Gly Ile Ile Met Ala Leu Phe Asp Arg Thr Arg Thr Asp Lys
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Gly Gln Val Ile Asp Ala Asn Met Val Glu Gly Thr Ala Tyr Leu Ser
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Ser Phe Leu Trp Lys Thr Gln Lys Ser Ser Leu Trp Glu Ala Pro Arg
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Gly Gln Asn Met Leu Asp Gly Gly Ala Pro Phe Tyr Thr Thr Tyr Arg
210 215 220
Thr Ala Asp Gly Glu Phe Met Ala Val Gly Ala Ile Glu Pro Gln Phe
225 230 235 240
Tyr Glu Leu Leu Ile Lys Gly Leu Gly Leu Lys Ser Asp Glu Leu Pro
245 250 255
Asn Gln Met Ser Met Asp Asp Trp Pro Glu Met Lys Lys Lys Phe Ala
260 265 270
Asp Val Phe Ala Lys Lys Thr Lys Ala Glu Trp Cys Gln Ile Phe Asp
275 280 285
Gly Thr Asp Ala Cys Val Thr Pro Val Leu Thr Phe Glu Glu Val Val
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Gln Asp Val Ser Pro Arg Pro Ala Pro Leu Leu Leu Asn Thr Pro Ala

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<210> 109
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 <212> DNA
 <213> Homo sapien

<400> 109

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 <212> DNA
 <213> Homo sapien

<400> 110

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<210> 111.

<211> 1289

<212> DNA

<213> Homo sapien

<400> 111

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tcategcagc	cggtgtgtgt	gtctttgtcc	ttgggttctt	gggtgtgtat	gggtgctaaga	360
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<210> 112

<211> 315

<212> PRT

<213> Homo sapien

<400> 112

Met	Val	Phe	Thr	Val	Arg	Leu	Leu	His	Ile	Phe	Thr	Val	Asn	Lys	Gln
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Leu	Gly	Pro	Lys	Ile	Val	Ile	Val	Ser	Lys	Met	Met	Lys	Asp	Val	Phe
			20					25					30		
Phe	Phe	Leu	Phe	Phe	Leu	Gly	Val	Trp	Leu	Val	Ala	Tyr	Gly	Val	Ala
		35				40					45				
Thr	Glu	Gly	Leu	Leu	Arg	Pro	Arg	Asp	Ser	Asp	Phe	Pro	Ser	Ile	Leu
	50				55					60					
Arg	Arg	Val	Phe	Tyr	Arg	Pro	Tyr	Leu	Gln	Ile	Phe	Gly	Gln	Ile	Pro
65				70					75					80	
Gln	Glu	Asp	Met	Asp	Val	Ala	Leu	Met	Glu	His	Ser	Asn	Cys	Ser	Ser
			85					90					95		
Glu	Pro	Gly	Phe	Trp	Ala	His	Pro	Pro	Gly	Ala	Gln	Ala	Gly	Thr	Cys
			100				105						110		
Val	Ser	Gln	Tyr	Ala	Asn	Trp	Leu	Val	Val	Leu	Leu	Leu	Val	Ile	Phe
	115				120							125			
Leu	Leu	Val	Ala	Asn	Ile	Leu	Leu	Val	Asn	Leu	Leu	Ile	Ala	Met	Phe
	130				135						140				
Ser	Tyr	Thr	Phe	Gly	Lys	Val	Gln	Gly	Asn	Ser	Asp	Leu	Tyr	Trp	Lys
145				150				155						160	
Ala	Gln	Arg	Tyr	Arg	Leu	Ile	Arg	Glu	Phe	His	Ser	Arg	Pro	Ala	Leu
			165				170						175		
Ala	Pro	Pro	Phe	Ile	Val	Ile	Ser	His	Leu	Arg	Leu	Leu	Leu	Arg	Gln
		180				185						190			
Leu	Cys	Arg	Arg	Pro	Arg	Ser	Pro	Gln	Pro	Ser	Ser	Pro	Ala	Leu	Gln

```

      195      200      205
His Phe Arg Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr
  210      215      220
Trp Glu Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp
  225      230      235      240
Lys Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val
      245      250      255
Asp Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg
      260      265      270
Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly
      275      280      285
Trp Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro Pro Gly Gly
      290      295      300
Pro Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp
  305      310      315

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<210> 113

<211> 553

<212> PRT

<213> Homo sapien

<400> 113

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Met Val Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala
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Gln Leu Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu
      20      25      30
Ala Ala Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val
      35      40      45
Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly
      50      55      60
Leu Val Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly
      65      70      75      80
Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile
      85      90      95
Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu
      100      105      110
Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly
      115      120      125
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
      130      135      140
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
      145      150      155      160
Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
      165      170      175
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu
      180      185      190
Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu
      195      200      205
Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly
      210      215      220
Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His
      225      230      235      240
Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu
      245      250      255
Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg

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260 265 270
 Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe
 275 280 285
 Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
 290 295 300
 Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
 305 310 315 320
 Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
 325 330 335
 Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
 340 345 350
 Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala
 355 360 365
 Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
 370 375 380
 Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
 385 390 395 400
 Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
 405 410 415
 Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
 420 425 430
 Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
 435 440 445
 Gly Gly Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser
 450 455 460
 Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala
 465 470 475 480
 Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 485 490 495
 Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
 500 505 510
 Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
 515 520 525
 Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
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 Lys Ser Asp Leu Ala Lys Tyr Ser Ala
 545 550

<210> 114
 <211> 241
 <212> PRT
 <213> Homo sapien

<400> 114
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 20 25 30
 Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser
 35 40 45
 Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly
 50 55 60
 Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr
 65 70 75 80
 Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Phe Ile Leu Leu Leu Ile

				85					90				95
Phe	Ile	Ala	Glu	Val	Ala	Ala	Ala	Val	Val	Ala	Leu	Val	Tyr
			100						105				110
Met	Ala	Glu	His	Phe	Leu	Thr	Leu	Leu	Val	Val	Pro	Ala	Ile
			115										125
Asp	Tyr	Gly	Ser	Gln	Glu	Asp	Phe	Thr	Gln	Val	Trp	Asn	Thr
			130										140
Lys	Gly	Leu	Lys	Cys	Cys	Gly	Phe	Thr	Asn	Tyr	Thr	Asp	Phe
													160
Ser	Pro	Tyr	Phe	Lys	Glu	Asn	Ser	Ala	Phe	Pro	Pro	Phe	Cys
													175
Asp	Asn	Val	Thr	Asn	Thr	Ala	Asn	Glu	Thr	Cys	Thr	Lys	Gln
													190
His	Asp	Gln	Lys	Val	Glu	Gly	Cys	Phe	Asn	Gln	Leu	Leu	Tyr
													205
Arg	Thr	Asn	Ala	Val	Thr	Val	Gly	Gly	Val	Ala	Ala	Gly	Ile
													220
Leu	Glu	Leu	Ala	Ala	Met	Ile	Val	Ser	Met	Tyr	Leu	Tyr	Cys
													240
Gln													

<210> 115

<211> 366

<212> DNA

<213> Homo sapien

<400> 115

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ttgggtttgtg	aatccatctt	gctttttccc	catttgaact	agtcattaac	ccatctctga	180
actggtagaa	aaacatctga	agagctagtc	tahcagcacc	tgacaggtga	attggatggc	240
tctcagaacc	atttcaccca	gacagcctgt	ttctatcttg	cttaactaat	tagtttgggt	300
tctctacatg	cataacaaac	octgctccaa	tctgtcccat	aaaagtctgt	gacttgaagt	360
ttagtc						366

<210> 116

<211> 282

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (282)

<223> n = A,T,C or G

<400> 116

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gagaaatgag	atnnaacaca	atnttataga	gtctacttag	agaagatcaa	gtgaactcaa	120
agactttact	attttcatat	tttaagacac	atgatttttc	ctatttttagt	aacctgggtc	180
ataugttaaa	caaaggataa	tgtgaacagc	agagaggatt	tgttggcaga	aaatctatgt	240
tcaatctnga	acLatctana	tcacagacat	ttctattcct	tt		282

<210> 117

<211> 305

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (305)

<223> n = A,T,C or G

<400> 117

acacatgtcg ctteactgca tcttttagatg cttctgggca acatanagga acagggacca	60
tatttatect cccctctgaa acaattgcga atcaanacaa aatatatgaa acaatfgcaa	120
aataaggosa atatatgaa acacacaggtc tcgagatatl ggaatcagc caatgaagga	180
tactgatccc tgcacactgt cctaattgcag gatgtgggaa acagatgagg tcacctctgt	240
gactgcccc gcttactgca tgtacagagt ttctangctg cagttcagac agggagaaat	300
tgggt	305

<210> 118

<211> 71

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (71)

<223> n = A,T,C or G

<400> 118

accaagggtgt ntgaatctct gacgtgggga tctctgattc ccgcacaatc tgagtggaag	60
aantctggg t	71

<210> 119

<211> 212

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (212)

<223> n = A,T,C or G

<400> 119

actccgggtg gtgacagcag cagctggcat tgaacatngc aatgtggagc ccaaacacaa	60
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agtaagrtgg ccttctcaat aaagaaaaat tgaagggttt ctracteenc ggaattaant	180
aatggantca aganactccc aggcctcagc gt	212

<210> 120

<211> 90

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (90)

<223> n = A,T,C or G

<400> 120

actcgtttgca natcagggggc cccccagagt caccgtt.gca ggagtccttc tggctttgcn 60
ctcgcgcggc gcagaaatg ctgggggtgt 90

<210> 121

<211> 218

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (218)

<223> n = A,T,C or G

<400> 121

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gaataagatt tgcctaaaga ttgggggcta aaacatgggt attgggagac attcttgaag 120
atatncanct aaattangga atgaattcat ggtctctttg ggaattcctt taagatngcc 180
agcatanact tcatgtgggg atancagcta cccttcta 218

<210> 122

<211> 171

<212> DNA

<213> Homo sapien

<400> 122

tgggggtgta tgcacctgta aggacaaaaa ttgagactca actggcttaa ccaataaagg 60
catttggttag ctcatggaa cggaaagtcgg atggt.gggc atcttcagla ctgcattgagt 120
caccaccccg ggggggtcat ctgtgccaca ggtccctgtt gacagtgcgg t 171

<210> 123

<211> 76

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (76)

<223> n = A,T,C or G

<400> 123

ctatagcgtga agacnacaga atggtgtgtg ctgtgctatc caggaaacaa ttattatca 60
ttatcaanta ttgtgt 76

<210> 124

<211> 131

<212> DNA

<213> Homo sapien

<400> 124

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caatgtgtgt ggtcatatgg aggggaggag actctaaaat agccaatttt attctcttgg 120
ttaagatttg t 131

<210> 125
 <211> 432
 <212> DNA
 <213> Homo sapien

<400> 125
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 ctacagctctg cttttggcag aatgagat gaatttggat tcaatgagga tgcctgaagat 180
 ttgctcacc aacaaagt gaaacaactg agagaaztt ttcaggaaaa aagacagtgg 240
 ctcttgaggt atcagtcaat tttgagagatg tttcttagtt actgcatact tcatggatcc 300
 catggtgggg gtcttgcatc tgtaagaatg gaattgattt tgccttttcca agaattctcag 360
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 ctctttgtct gc 432

<210> 126
 <211> 112
 <212> DNA
 <213> Homo sapien

<400> 126
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 agtaagaatg ttatttcccc ccagggatca ccaaatattt ataanaattt gt 112

<210> 127
 <211> 54
 <212> DNA
 <213> Homo sapien

<400> 127
 accacgaac cacaacaag atggagcat caatccactt gccaaagaca gcag 54

<210> 128
 <211> 323
 <212> DNA
 <213> Homo sapien

<400> 128
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 ccaagacatt tggacagttt ctgtttgct tttagaatgg tttccctttt tcttagcctt 240
 ttctgcaca aggtctactc agtcccttgc ttgctcagtg gactgggctc cccagggcct 300
 aggtgcctt cttttccatg tcc 323

<210> 129
 <211> 192
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{192}
 <223> n = A,T,C or G

<400> 129
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 tgaaaacaca ctacatlaat ttntgtgaac catgatcaga tacaacccaa atcattcacc 120
 tagcacattc atctgtgata naagatagg tgaatttcac ttccttcaay ttggccaatg 180
 gataaacaaa gt 192

<210> 130
 <211> 362
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (362)
 <223> n = A,T,C or G

<400> 130
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 tataatgaag caacaaaaag gtgtgtgtta gtctataggt taagtttatg cccctgacaa 120
 gttctcattg tgttttgccg atctctgggc taatcgttgt atctccatg ttattagtaa 180
 ttctgtattc cttttgtta acgctgtgta gatgtaacct gctangaggc taactttata 240
 cttattttaa agctcttatt ttgttgtcat taaaatggca atttatgtgc agcactttat 300
 tgcagcggga agcactgtgt ggttggattgt aaagctcttt gctaacttta aaaagtcaatg 360
 gg 362

<210> 131
 <211> 332
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (332)
 <223> n = A,T,C or G

<400> 131
 ctttttgaaa gatcgtgttc actcctgtgg acatcttgtt ttaatggagt ttcccatgca 60
 gtangacttg tatggttgca gctgtcaga taaaaacatt tgaagagctc caaatgaga 120
 gttctccrag gttcgccttg ctgctccaag tctcagagc agcctctttt agyaggcatc 180
 ttctgaacta gattaaggca gcttgtaaat ctgatgtgat ttggtttatt atccaaactaa 240
 cttccatctg ttatcacttg agaaagccca gactcccan gacnggtacg gattgtgggc 300
 atanaaggat tgggtgaagc tggcgttgtg gt 332

<210> 132
 <211> 322
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (322)
 <223> n = A,T,C or G

<400> 132
 acttttgcca ttttgtatat ataaacatc ttggagacatt ctctgaaa ctgggtgtcc 60

```

agtggctaag agaactcagat ttcaagcaat tctgaaagga aaaccagcat gacacagaat.   120
ctcaaatctcc caaacagggg ctctgtggga acaatgaggg aggaaccttg tatctcaggt   180
tttagcaagt caaatgaan atgacaggaa aggcctcttct atcaacaaag aggaagattg   240
ggatgcttct aaaaaaact ttggtagaga caataggaat gctnaatct agggaagct   300
gtcaaatct acaattggtc ca                                     322

```

<210> 133

<211> 278

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 133

```

acaagccttc acaagttta ctcaatggg attaatcttt ctgtanttat ctgcataatt   60
cttgtttttt tttcatctg gctcctgggt tgacaatttg tggaaacaa tctattgcta   120
ctatttaaaa caaatcaaa atcttctct ttaagctatg ttaaatcaa actattcctg   180
ctatttctgt ttgtcaaa agcttatatt ttcaaaata tgtntatttg ttgatgggt   240
cccacgaaac actaataaa accacagaga ccagctg                                     278

```

<210> 134

<211> 121

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(121)

<223> n = A,T,C or G

<400> 134

```

gttttaaaaa ctgttttagc tccatagagg aaagaatgtt aaactctgta ttttaaaana   60
tgattctctg aggttaaaact tggtttctaa atgttatttt laattgtatt ttgcttttgg   120
t                                     121

```

<210> 135

<211> 350

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(350)

<223> n = A,T,C or G

<400> 135

```

acttanaacc atgectagca catcagaatc cctcaaagaa catcagata atcclatecc   60
atancaagtg gtgactggtt aagcgtgcga caaaggtcag ctggcacatt acttgtgtgc   120
aaacttgata ctcttgctct aagtaggaac tagtatcac tnoctaggan tgglaactcaa   180
gggtgcccc caactcctgc agccgtctct ctgtgccagn cctgnaagg aactttcgtc   240
ccacctcaat caagccctgg ggcctgtatc ctgcaattgg ctgaacaaac gtllgctgag   300
ttccraagga tgcbaagctt ggtgctcaan tccctggggcg tcaactcagt   350

```

<210> 136
 <211> 399
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (399)
 <223> n = A,T,C or G

<400> 136
 tgtaccgtga agacgacaga agttcgcctg cagggacagg gacgggcccga ggccagggtt 60
 gctgtgattg tatccgaata ntactcgtga gaaaagataa tgagatgacg tgagcagcct 120
 gcagacttct gtctgccttc aanaagccag acagggaaggc cctgcctgcc ttggctctga 180
 cctggcggcc agccagccag ccacagggtg gcttcttctt ttgtggtga caacnccaag 240
 aaaactgcag agggccaggg tcaggcctna gtgggtangl gacctaataa caccagggtg 300
 tccagggac ccgggcaagg gccatcccca cctccagcca gcctgcccau tggcgtgatg 360
 ggtgcagang gatgaagcag ccagntgctc tgcctgtggt 399

<210> 137
 <211> 165
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (165)
 <223> n = A,T,C or G

<400> 137
 actggtgtgg tnggggggtga tgcctggtgg anaggttgan gtgacttcac gatggtgtat 60
 ggaaggagtg tgtgaacga gggatgtaga ngttttggcc gtgctaaatg agcttoggga 120
 ttggtggtc cactggttg tcactgtcat tggtygggtt cctgt. 165

<210> 138
 <211> 338
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (338)
 <223> n = A,T,C or G

<400> 138
 actcactgga atgcccatt cacaacagaa tcagagggtc gtagaaacat taatggctcc 60
 ttaacttctc cagtaagaat cagggacttg aatgggaac gtaaacagcc acatgcccaa 120
 tgctgggcag tctcccatgc ctccacagt gaaagggtt gaggaaaatc acatccaatg 180
 tcatgtgtt ccagccacac caaagggtgc ttggggtgga gggctggggg catananggt 240
 cagccctcag gaagcctcaa gttccattca gctttgccac tgtacattcc ccatntttaa 300
 aaaaactgat gccctttttt tttttttttg taataatc 338

<210> 139
 <211> 382

<212> DNA

<213> Homo sapien

<400> 133

gggaatcttg	gtttcttgga	tctgggttgc	ctctagccga	ggcactcttg	acagaacaaa	60
gaagggaact	tccagtaaga	aggcgattta	cagccagcc	agtgcacgaa	gtgagggaga	120
attcagacag	acctcgatcat	tcttggtgag	agccctggctg	gtcagccgca	tatcatctgc	180
atttgcccta	ctcaggtgct	accggaactct	ggccctgat	gtctgtagtt	tacagggatg	240
ccttatctgc	ctctacacac	ccacaggggc	ccctaattct	tgggatgct	ttttaataat	300
gtcagctatg	tgcacacac	tcttctatgc	ctcctctcc	tttctacca	ctgctgagtg	360
gcctgggaact	tgtttaaagt	gt				382

<210> 140

<211> 200

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (200)

<223> n = A,T,C or G

<400> 140

accaaactt	ctttctgttg	tgttngatlc	tactataggg	gtcttngcttn	ttctaaanat	60
acttttcatt	taacactttt	tgttaagtgt	caggctgcac	tttgcctccat	anaattattg	120
ctttcagcct	tcaacttgta	tgtgtttgtc	tcttanagca	ttgggtgaat	cacatattct	180
atattcagca	taaaggagaa					200

<210> 141

<211> 335

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (335)

<223> n = A,T,C or G

<400> 141

actttatctt	cagaacactc	atattgttgc	aaaaacacat	agaaaaataa	agtttcggtgg	60
gggtgctgac	ttaacttcaa	gtcacagact	tttatgtgac	agattggagc	aggggttctt	120
atgcatgtag	agaaccccaa	ctaatttatt	aaacaggata	gaaacaggct	gtctgggtga	180
aattggttctg	agaaccatcc	aattcacctg	tcagatgctg	atanactagc	cttccagatg	240
ttttctacc	agttcagaga	tnggttaatg	actantccca	atgggggaaa	agcaagatgg	300
attcaccaac	caagtaattt	taaaccaaga	cactt			335

<210> 142

<211> 459

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (459)

<223> n = A,T,C or G

<400> 142

accagggttaa	lattgocnca	tatatccttt	cnaatbpggg	getaaacaga	vgtgatttca	60
gggttgttta	aagacaaccc	agcttaatat	caagagaaat	tgtgaccttt	catggagtat	120
ctgatggaga	aaacactgag	ttttgacaaa	tcttacttta	ttcagatagg	agtctgatca	180
caatgtgtcc	aacaacactc	aaacactaaa	tcaaatatna	tcagatgta	aagattggtc	240
ttcaaacatc	atagccaatg	atgcccgcct	tgcctataat	ctctccgaca	taaaaccaca	300
tcaaaccttc	agtggccacc	aaacattcca	gcacagcttc	cttaactgtg	agctgtttga	360
agctaccagt	ctgagcacta	ttgactatnt	tttccangct	ctgaatagct	ctagggatcl	420
cagcangggc	gggaggaacc	agctcaacct	tgccgtant			459

<210> 143

<211> 140

<212> DNA

<213> Homo sapien

<400> 143

acatttcctt	ccaccaagtc	aggactctctg	gcttctgtgg	gggttccttat	cacctgaggg	60
aatcccaaac	agtctctcct	agaaaggaat	agtgtcacca	accctaccca	cttccctgag	120
accctccgac	ttccctgtgt					140

<210> 144

<211> 164

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (164)

<223> n = A,T,C or G

<400> 144

acttcagtaa	caacatacaa	taacaacatc	aaagtgtatat	tgccatcttt	gtcattttct	60
atctatacca	ctctcccttc	tgaatacaan	aatcactanc	caatcactta	tacaaatttg	120
aggcaattta	tccatatttg	tttcaatca	ggaaaaaag	atgt		164

<210> 145

<211> 303

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (303)

<223> n = A,T,C or G

<400> 145

acgttagacc	ttcaactttg	tatttqtaat	ggcaaacatc	cagagagaaat	tcttaaacaa	60
actggagggt	attttatccc	aattatccca	ttcatttaaa	tgcctccctc	ctcaggctat	120
ggaggacagc	tatcataagt	gggcccaggc	atccagatcc	ttccatttgt	ataaacttca	180
gtaggggagt	ccatccaaat	gacaggtcta	atcaaggag	gaaatggaac	ataagcccag	240
tagtaaaatn	ttgcttagct	gaaacagcca	caaaagactt	accgcccgtg	tgattaccat	300
cba						303

<210> 146

<211> 327
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(327)
 <223> n = A,T,C or G

<400> 146
 actgcagctc aattagaagt ggtctctgac ttctatcanc ttctccctgg gttccatgac 60
 actggccctgg agtgactcat tgcctctggt ggttgagaga gtccctttgc caacaggcct 120
 ccaagtcagg gctgggattt gtttcttttc caccattctag caacatattg ctggccactt 180
 cctgaacagg gaggggtggg gaggccagca tggaaacaag tgcacttttc taaagttagc 240
 agacttgccc ctgggcccgt caccctact gatgaacttc tgtgacctga ggatgggaatg 300
 tgggggtgag ctgtgtgact ctatggt 327

<210> 147
 <211> 173
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(173)
 <223> n = A,T,C or G

<400> 147
 acattgtttt tttyagatza agcattgana gagctctcct. taaagtgaca caatgggaagg 60
 actgggaacac ataccacat ctttggtctg agggataatt ttctgataaa gtcttgctgt 120
 atattcaagc acatctgta tatattatc agttccatgt ttatagccta gtt 173

<210> 148
 <211> 477
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(477)
 <223> n = A,T,C or G

<400> 148
 accaaccatt tctctcatcg aatttttaac ccaaaactcac tcaactgtgac ttcttatcct. 60
 atgggatata ttatttgatg ctccctttca tcaracatat atgaataata cactcactact 120
 gccctactac ctgctgcact aatcacattc ctttctgtc ctgacoutga agcattggg 180
 gtggtctatg tggccatcag tccctgctg caccctgagc ccttgagctc ctttgcctac 240
 nccanccac ctcaaccgac ccatcctctt acacagctac ctcttgctc tctaaaccca 300
 tagattatnt ccaasttcag tcaattaaat tcttctaac actctacouy acatgtccag 360
 caccactggt aagctttctc cagccaacac acacacacac acacacacac acacacatat 420
 ccaggcacag gctacctcat ctccacaatc acccctttaa ttaccatgt atgggtgg 477

<210> 149
 <211> 207
 <212> DNA

<213> Homo sapien

<400> 149

```
acagttgtat tataatatac agaatataa: ttgcantgag agcatttcaag agggagaagac      60
taacatattt tagagagcca aggaaggttt ctgtggggag tgggatgtaa ggtggggcct      120
gatgataaat aagagtcagc caggttaagt ggtggtgtgg tatgggcaca gtgaagaaca      180
tttcaggcag agggacacag agtgaan                                           207
```

<210> 150

<211> 111

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{111}

<223> n = A,T,C or G

<400> 150

```
accttgattt catgtgtgt ctgatggaaa ccccaactatc taatttagct aagacatggg      60
cacttaasly tggtcagtgt ttggacttct taactantgg catctttggg t              111
```

<210> 151

<211> 196

<212> DNA

<213> Homo sapien

<400> 151

```
agtcggcag gtcatattga acattccaga taactatcat tactcgatgc tgttgataac      60
agcaagatgg ctctgaactc agggtcacaa ccagctattg gaccttacta tgaaaccat      120
ggatcccaac cggaaaacc ctatcccgca cagcccacty tggcccccac tgtctacgag      180
gtgratccgg ctcaagt                                           196
```

<210> 152

<211> 132

<212> DNA

<213> Homo sapien

<400> 152

```
acagcatttt cacatgtaag aaggagagaa ttccataatg taggagaaag ataacagAAC      60
cttccctttt tcatctagt gtggaaacct gatgctttat gttgacagga atagaaccag      120
gaggagattt gt                                              132
```

<210> 153

<211> 285

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{285}

<223> n = A,T,C or G

<400> 153

```
acaancccc nganaggcca ctgacgtgg tgtcatggcc tccaaacatg aagtgtrag      60
```

cttctgctct	tatgtctca	tctgcaat	ctttaccatt	tttctctcg	ctcaggcagg	120
gcacatcaat	aaagtccaaa	gtcttggact	tggccttggc	ttggaggagg	tcatcaaac	180
cttggctagt	gagggtgagg	cgcggctcct	ggatgacggc	atctgtgag	tctgcaaca	240
gtctgcaggc	cctgtggaag	cgccgtccac	acggagtnag	gaatt		285

<210> 154
 <211> 333
 <212> DNA
 <213> Homo sapien

<400> 154						
accacagtc	tgctgggcca	gggttcctg	accccttctg	tgaagaagcca	tattatcacc	60
accccaaat	tttctttaa	tatctttaac	tgaaggggtc	agcctcttga	ctgcaggagc	120
cctaagcgg	ttacacagct	aactcccaat	ggccttgatt	tgtgaaattg	ctgtgcctg	180
attggacag	gagtcgaagg	tgttcagctc	cctctctcgg	tggaaacaga	ctctgattg	240
agtttcaca	attctggggc	cacctctgca	tgtctcctct	gaaataaaa	ccggagaatg	300
gtcaggcctg	tctatcat	atggatcttc	cgg			333

<210> 155
 <211> 308
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> 11... (308)
 <223> n = A,T,C or G

<400> 155						
actgggagca	ataaaaccca	catcacagtg	ttgtgtcaaa	gatcatcagg	gcattggatgg	60
gaagtgctt	tgggaactgt	aaagtgccta	acacatgata	gatgattttt	gttataatat	120
ttgaatcagg	gtgcatacaa	actctctctg	ctgtctctcc	tgggcctcag	ccccagcccc	180
atcacagctc	actgtctctg	tcatcagggc	ccagcatgta	gtggttgatt	cttcttgggt	240
gcttttagcc	tccanaagtt	tctctgaagc	caacccaaac	tctangtata	aggcatgctg	300
gcccctgg						308

<210> 156
 <211> 295
 <212> DNA
 <213> Homo sapien

<400> 156						
accttgctcg	gtgcttggaa	catattagga	antcaaaaata	cgagatgata	acagtgccta	60
ctattgatta	ctgagagaac	tgttagacat	ttagttgaag	atttcttaca	caggaaactga	120
gaataggaga	ttatgtttgg	ccttcataat	ctctcttata	ctccttgcct	cattctatgt	180
ctaataatatt	ctcaatcaaa	taagggttagc	ataatcagga	aatcgaccaa	ataccaatat	240
aaaaccagat	gtctatctct	aagattttca	atagaaaac	aaattaaag	actat	295

<210> 157
 <211> 126
 <212> DNA
 <213> Homo sapien

<400> 157						
acaaagtttaa	atagtgctgt	cactgtgcat	gtgctgaat	gtgaaatcca	ccacatttt	60

gaagagcaaa acaaattctg tcatgtatcc tatatcttgg gtctgtggga tatctgtccc 120
cttagt 126

<210> 158
<211> 442
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{442}
<223> n = A,T,C or G

<400> 158
accactggg cttggaaaca cccatcctta atacgatgat ttttctgtcg tctgaaactg 60
aannccagcag gctgtcccta gtcagtccct ccttccagag aaaaagagat ttgagaaagt 120
gocctgggtta ttcaccatta attcctctcc ccaactctc tgggtcttcc cttactattt 180
ctgggtgggttc tgaaccaaagc aggtcatggg tctgtcagaa cttgggatcc cagtgaagta 240
natgtttgta gccttgcata cttagccctt cccacgcaca aacggagtg cagagtcgtg 300
craacctgt tttcccaagt cacttagaca gattcacagt gcggaattct ggaagctgga 360
nacagacggg ctctttgcag agcggggact ctgagangga catgagggcc tctgctctg 420
tgttcattct ctgatgtcc gt 442

<210> 159
<211> 498
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{498}
<223> n = A,T,C or G

<400> 159
acttccagggt aacggtgttg tttccgttga gctgaactg atgggtgacg ttgtaggttc 60
tccacaaaga atgaggttg cagagcgggt agggaaagag gctgttccag ttgcaactgg 120
gctgctgtgg actgtgttg attcctcact acggcccaag gttgtggaac tggcannaa 180
gtgtgtgttc gganttgagc tggggcggct gtggtaggtt gtgggctctt caacaggggc 240
tgctgtgggt cggggangtg aanytggtt gtcacttgag cttggccagc tctggaaggt 300
antanattct tctgaaggg cagcgttgtt ggagctggca ngggtcanty ttgtgtgtaa 360
cgaaccagtg ctgctgtggg tgggtgtana tctcccaaa agcctgaagt tatggtgten 420
tcaggtaana atgtggtttc agtgcctctg ggcnctgtg gaaggttcta nattgtcacc 480
aagggaataa gclgtggg 498

<210> 160
<211> 380
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{380}
<223> n = A,T,C or G

<400> 160

```

accctgcacac agcttccctg ccaactuuu aaggagacat caacctctag acagggaaac      60
agcttcagga tacttccagg agacagagcc accagcagca aacaaatat tccatgctt      120
ggagcatggc atagaggaag ctganaaetg tgggtctga ggaagcatt tgagtctggc      180
cactagacat ctcatnagc atttgtgtga agagatgcc cctgacccca gatgccttc      240
ccaccttcc ctcactctca cactcttga utttccactc tgtataatt taacatcctg      300
gagaaaatg gcagtttgac ggaacctgt cacaacgga gggctgatt tctaacgaaa      360
cttgtagaal gaagcctgga                                380

```

<210> 161
 <211> 114
 <212> DNA
 <213> Homo sapien

```

<400> 161
actccacatc cctctgagc aggcggctgt cgttcaaggc gtatttgcc ttgccctca      60
cactgtccac tggccttca tccatttgt gcttaattcc tcgaaagagc atgt      114

```

<210> 162
 <211> 177
 <212> DNA
 <213> Homo sapien

```

<400> 162
acbtctctaaa tcgatacaa tgatacttag tgtagtctta atatcctcat atatctcaaa      60
gttttactac tctgataatt ttgtaaacca ggttaaccga acatccagtc atacagcttt      120
tggtagatata taacttggca ataaccagc ctggtgatcc ataaactac tcaactgt      177

```

<210> 163
 <211> 137
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{137}
 <223> n = A,T,C or G

```

<400> 163
catctatada gacaggcgtg aagacattca cgacaaaac gcyaaattct atcccgtgac      60
canagaaggg agctacggtc actcctacat cctggcgtgg gtggccttcg cctgcacctt      120
catcagcggc atgatgt                                137

```

<210> 164
 <211> 469
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{469}
 <223> n = A,T,C or G

```

<400> 164
cttatcaaa tgaattttct cctgggcagc gttgtgatct ttgccacctt cgtgaactta      60
tgcaatgcat catgatatt cctacataat gaggagattc caggagattc aacagggaaa      120

```

tgcatggatc	tcacaggaa	caaacacccc	ataaactcgg	agtggcagac	tgacaactgl	180
gagacatgca	cttgctacga	aacagaaatt	tcatgttagc	cccttggttc	tacacctgtg	240
ggttatgaca	aagacaactg	ccaaagaatc	ltcaaggagg	aggactgaca	gtatatcgtg	300
gtggagaaga	aggacccaaa	aaagacctgt	tctgtcagtg	aattggataat	ctaatgtgct	360
tctagtgagg	adaggggtcc	caggccaggc	ctcattctcc	tctggcctct	aatagtcgat	420
gattgtgtag	ccatgcttat	cagtaaaag	atntttgagg	aaacacttt		469

<210> 165

<211> 195

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{195}

<223> n = A,T,C or G

<400> 165

acagtttttt	atanatatcg	acattgcagg	cacttctgtt	cagtctcata	aagctggtag	60
atcagctgtc	atcactatt	acttggctag	agtaaaatt	attcttatag	cccatgtccc	120
tgcaggccgc	cggccgctag	ttctcgttcc	agtcgtcttg	gcacacaggg	tgccaggact	180
tctcttgaga	tgagt					195

<210> 166

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{383}

<223> n = A,T,C or G

<400> 166

acatctttgt	agtgtggcac	atcagggggc	catacgggtc	acagtcactc	atagcctcgc	60
cgaggtcgga	gtccacacca	ccggtgtagg	tgtgctcaat	cttgggcttg	gggcccacct	120
ttggagaagg	gatattgctg	acacacatgt	ccacaaagcc	tgtgaactcg	ccaaagaatt	180
tttgcagacc	agcctgaagc	aggggctggc	gttcagcttc	agctcctcct	tggtcaggctg	240
gatgcuaacc	togtctangg	tccgtgggaa	gctgggtgtc	acntcaacta	caacctgggc	300
gangatctta	taaagaggct	ccnagataaa	ctccacgaaa	cttctctggg	agctgctagt	360
nggggccttc	ttggtgaact	ttc				383

<210> 167

<211> 247

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{247}

<223> n = A,T,C or G

<400> 167

acagagccag	accttggaca	tcaatgaanc	agagattcag	actaaacccc	aagtoganat	60
tggagcagaa	atggagcaa	gaagtgggcu	tggggctgaa	glapagacca	aggcnactgc	120

tatandcattc cccagagccc actctcaggg caaggcctatg gttgggggag anccagagac	180
tcattctgan tccaaagtgg tggctygaac actgggtcatg acanaggcag tgactctgac	240
tgangtc	247

<210> 168

<211> 273

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(273)

<223> n = A,T,C or G

<400> 168

actttctaagt ttctagaag tgggaaghatt gtatccatcc tggaaatggg ttactttcaa	60
aatccctcan ccttggttctt cactactgtc tatactgana gtgtcatgtt tcccaaaagg	120
gctgaacoot gagcctgnat ttctactcat ccttgagaag ccttttccag taggggttggc	180
aattcccaac ttcttggca caagcttccc aggttctctc ccttggaagc ctccagcttg	240
agtcacagat aactccatgg gctgcccctgg gca	273

<210> 169

<211> 431

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(431)

<223> n = A,T,C or G

<400> 169

acagccttgg ctctcccaaa ctccacagtc tcagtgcaga aagatcatct tccagcagtc	60
agctcagacc agggtcnaag gatgtgacat caacagtttc tgytttcaga aaggttcta	120
ctactgtcaa ctgacccccc atacttctc aaaggctgtg gtaagtlttg cacagggtgag	180
ggcagcagaa aggggttant tactyatgga caccatcttc tctgtatart ccccaactgac	240
cttgccatgg gcaaaaggcc ctaccacaaa aacaaatagga tcaatgctgg gcaccagctc	300
acgcacatca ctgacaaccg ggatygaaa agaantgcca actttcatar atcccaactgg	360
aaagtgatct gatactggat tcttaattac ctccaagaag ttctgggggg catcagctgc	420
tcaaacactg a	431

<210> 170

<211> 266

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(266)

<223> n = A,T,C or G

<400> 170

aactgtgggc tgggtgttta tgctgtgccc ggtgtgtgaa agggacttca gagggtggagc	60
tcaaggagct ctgcaggcat ttgtcccaac ctctccnag canagggagc aacctaacct	120
ccccgttaga aaacacaccg attggagtc tggagggggg agtgggggtg ggcatttgat	180

gtataattgt caactgaatg aangagccchy agagggaanga gacchaaatg analtygect 210
tcaaagctag ggggtctggca gytgga 266

<210> 171

<211> 1248

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{1248}

<223> n = A,T,C or G

<400> 171

ggcagccaaa	tcataaacgg	cgaggactgc	agcccgcaat	cgagagccctg	gcaggcggca	60
ctgggtcatgg	aaaacgaatt	gttctgctcg	ggcgtccctgg	tgcacccgca	gtgggtgctg	120
ttagccgcau	actgtttcca	gaagtgaagt	cagagctcct	acaccatcgg	gctgggacctg	180
cacagtcttg	agggcgaacca	agagccagg	agccagatgg	tggaggccag	cctctccgta	240
cggcagccag	agtacacag	acccttgctc	gctacagacc	tcatgtctat	caagttggac	300
gaatecgtgt	cagagtcctga	cacccatcgg	agcatccgca	ttgcttcgca	gtgccttacc	360
gcgggggaac	cttgccctgt	ttctggctgg	ggtctgctgg	ngaacggcag	aatgcctacc	420
gtgttgcagt	gcgtgaacgt	gtcgttgggt	tttgaggagg	tctgcagtaa	gctctatgac	480
ccgtctgtacc	acccccagcat	gttctgcgcn	ggcggagggc	aagaccagaa	ggactcctgc	540
aacgttgaat	ctgggggggc	cctgatctgc	aacgggtacc	tgaggggctt	tgtgtcttcc	600
ggaaaagccc	cgtgtggcca	agttggcgtg	ccaggtctct	acaccaccc	ctgcaaatcc	660
actgggtgga	tagggaaaaac	cgtccaggcc	agtttaartct	ggggactggg	aacccatgaa	720
attgaccccc	aaatcacctcc	tggggaaagga	attcagggaat	atctgttccc	agccctcctc	780
cctcaggccc	caggagtcca	ggcccccgcc	cctcctccc	tccaaucag	ggtacagatc	840
cucagccct	cctcctccag	acccaggagt	ccagaccccc	cagccctcc	tcctcagac	900
ccaggagtcc	agccctcct	cctcagacc	caggagtcca	gaccccccag	cctcctcc	960
ctcagaccca	ggggtrcagg	cccccaacc	ctcctcctcc	agactragag	gtccagcccc	1020
ccacccctcc	attcccccaga	cccagagggtc	cagggtcccag	ccccctctcc	ctragaccca	1080
gcggtccaat	gccacctaga	ctnccctgt	acacagtgc	ccttctgggc	acgttgaccc	1140
aaccttacca	glttggtttt	catttttngt	ccctttcccc	tagatccaga	ataaaagttt	1200
agggagagng	caaaaaaaa	aaaaaaaaa	aaaaaaaaa	aaaaaaa		1248

<210> 172

<211> 159

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> {1}...{159}

<223> Xaa = Any Amino Acid

<400> 172

Met	Val	Glu	Ala	Ser	Leu	Ser	Val	Arg	His	Pro	Glu	Tyr	Asn	Arg	Pro
1				5				10						15	
Leu	Leu	Ala	Asn	Asp	Leu	Met	Leu	Ile	Lys	Leu	Asp	Glu	Ser	Val	Ser
			20					25					30		
Glu	Ser	Asp	Thr	Ile	Arg	Ser	Ile	Ser	Ile	Ala	Ser	Gln	Cys	Pro	Thr
			35				40					45			
Ala	Gly	Asn	Ser	Cys	Leu	Val	Ser	Gly	Trp	Gly	Leu	Leu	Ala	Asn	Gly
	50						55								60

Arg Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu
 65 70 75 80
 Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe
 85 90 95
 Cys Ala Gly Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser
 100 105 110
 Gly Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe
 115 120 125
 Gly Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn
 130 135 140
 Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 145 150 155

<210> 173

<211> 1265

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...[1265]

<223> n = A,T,C or G

<400> 173

```

ggcagcccgcc actcgccagcc ctggcagggc gactcggtca tggaaaacga attgttctgc 60
tggggcgtcc tgggtgcatcc gcaatgggtg ctgtcagccg cacactgttt ccagaactcc 120
tacaccatcg ggtctgggct gcaagtcctt gaggccgacc aagagccagg gaggcagatg 180
gtggayggcc gctctcctgt acggcaccga ggtacacaa gacatttgcg cgtcaacgac 240
ctcatgtcca tcaagttgga cgaatccgtg tccgagtcgt acaccatcng gaggatcagc 300
attgcttcgc agtgccctac cggggggaac tcttgccctg ctctcggctg gggtcagctg 360
ggaaacgggt agttcacagg tgtgtgtctg cctctctcaa ggaggccctc tgcacagtcg 420
cggggggctga ccagaggtcc tgcgtccag gcaaatgca taccgtgctg cagtgcgtga 480
acgtgtcggg ggtgtctgga gaggcttgra gtaagctcta tgaccgctg taccacccca 540
gcatgttctg cyccggcgga gggcagagcc agaaggactc ctgcaacggt gactctgggg 600
ggcccttgat ctgcaacggg tacttgagg gcttctgtct tttcggaaaa gccctgtgtg 660
gccaagttgg cytgccaggt gtctacacca acctctgcaa attcactgag tggatagaga 720
aaacgttcca ggcagttcaa ctctggggac tgggaaccca tgaaattgac ccccaaatac 780
atctgcgga aggaattcag gaatatctgt tccagcccc tctccctca ggccaggag 840
tccaggeccc cagccctcc tccctcaaac caagggtaca gatccccag cctcctccc 900
tcagacccag gagtcragac ccccagccc ctctcctc agacccagg gtcacgccc 960
tctctctca gacccaggag tccagacccc ccagccctc ctctctcaga ccuagggggt 1020
gaggccccc accctctctc cttcagagtc agaggttcaa gcccccacc cctcgttccc 1080
cagacccaga ggttnaggtc ccagccctc ttccttuga cccagnggtc caatgccacc 1140
tagattttcc ctgnacacag tggcccttg tggnaagttg acccaacctt accagttggt 1200
ttttcatttt tngtcccttt cccctagatc cagaaataaa gttaaaggag nnggcaaaaa 1260
aaaaa 1265
  
```

<210> 174

<211> 1459

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...[1459]

<223> n = A,T,C or G

<400> 174

ggtcagccgc	acactgtttc	caggaagtgg	tgcagagctc	ctacaccate	gggctggguc	60
tgcacagtct	tggagccgac	cagagccrag	ggagccagat	ggtggaggcc	agcctctccg	120
tacggcacc	agagtacaac	agcccttgc	togctaacga	cctcatgctc	atcaggttgg	180
acgaatccgt	gtccgagtct	gacaccatcc	ggagcatcag	cattgcttcg	cagtgcctta	240
cggcggggaa	ctcttgcttc	gttcttggt	ggggctctgt	ggcgagccgt	gagctcagcg	300
gtgtgtgtct	gcctctctca	aggaggtctc	ctgcccaytc	gcgggggctg	acccagagct	360
ctgcgtccca	ggcagaatgc	ctaccgtgt	gcagtgcgtg	aacgtgtcgg	tgggtgtctga	420
ngaggtctgc	antaagtctc	atgaccctgt	gtaccacccc	ancatgttct	gcgcgggctg	480
agggccagac	cagaaggact	cctgcaacgt	ggagaggggg	aaaggggagg	gcaggccgct	540
cagggagggg	tgagagaggg	ggagacagag	acacacaggg	cgcacggcgg	agatgcagag	600
atggagagac	acacagggag	ccagtgaaca	ctagagagag	aaatgcagag	aaacagagaa	660
ataaacacag	gaataaagag	zagcaaggga	agagaggaac	agaaacagac	atggggaggc	720
agaaacacac	acacatagaa	atgcaagtga	ccttccaaac	gcctggggcc	tgagggtggg	780
gacctccacc	caatagaaaa	tectcttata	acttctgact	ccccaaaaac	ctgactagaa	840
atagcctact	gttgacgggg	agccttacc	ataacataaa	taqtctgatt	atgcatacgt	900
tttatgcatt	catgatctac	cttctgttga	attttttgat	atttctaaag	taacagttc	960
gtctgtgaat	tttttttaaa	tgttgcaact	ctcctaaaaa	tttcttgatg	tgtttcttga	1020
aaaaatccaa	gtataagtg	auttgtgcat	tcaaacccag	gttgttcaag	ggtcaactgt	1080
gtaccagag	ggaaacagtg	acacagattc	atagaggtga	aacccgagga	gaaacaggga	1140
aaatcaagac	tctacaaaga	ggctgggcag	ggtgggtcat	gcctgtaact	ccaggcacttt	1200
gggaggccgg	gcaggccagat	cacttgaggt	agggagttca	agaccagcct	ggccaaaatg	1260
gtgaaatcct	gtctgtacta	aaatataaaa	agttagctgg	acatggtggc	agggcgcctgt	1320
aatcccgact	acttgggagg	ctgaggccag	agaaltgctt	gaatatggga	ggcagaggtt	1380
gaagtgaagt	gagatcacac	cactatctct	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaa	aaaaaa					1459

<210> 175

<211> 1167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (1167)

<223> n = A,T,C or G

<400> 175

gcgcagccct	ggcaggccgc	actggctcat	gaaacagaa	tgtctctgct	gggcgtcctg	60
gtgcacccgc	agtggtgtgt	gtcagccgca	cactgtttcc	agaaactccta	caccatccgg	120
ctgggcccgc	acagtcttga	ggccgaccaa	yagccagggg	gcagagctgt	ggaggccagc	180
ctctcgttac	ggcaccagga	gtacacacaga	ctcttgctcg	ctaaccgacc	catgctcctc	240
aaagtggagc	aatccgtgtc	cgagctctga	accatccggg	gcacacagcat	tgtctcgcag	300
tgcctacccg	cgagggaactc	ttgcctcgtt	tctgggtggg	gtctcgtggc	gaacggcaga	360
atgcctarcc	tgtctgacck	cgtgaaucgt	tgggtgggtg	ctgaggangt	ctgcagttaa	420
ctctatgacc	cgtctgacca	ccnagcagc	ttctgcgcgc	gcggagggga	agaccagaa	480
gactcctgca	acggtgactc	tggggggccc	ctgatctgca	acgggtactt	gcagggcctt	540
gtgtctttcg	gaaagaccnc	gtgtgaccaa	cttggcgtgc	caggtgtcta	caccacacct	600
tgcraatcca	ctgagtggtg	agagaaaacc	gtccagacaa	gttaactctg	gggactggga	660
acccatgaaa	ctgacccccc	aatatctcct	ggcgaangaa	ttcaggaata	tttgttccca	720
gccctcctc	cctcaggccc	aggagtccag	gccccuagcc	cctctccccc	caaaccaagg	780
gtacagatcc	ccagccctcc	ctcctctaga	cccaggagtc	cagacccccc	agccctcctc	840
cctcagaccc	caggagtcca	gccctcctc	cctcagagcc	aggagtccag	ccccccagc	900

ccntccntccg	tcagagccag	gggtgcaggc	ccccaccctc	tctccntca	gagtcagagg	960
tccagcccc	caaccctctg	ttccccagau	ccagaggtnc	aggctccvago	ccctcctccc	1020
tcagagccag	gggtccaatg	ccacctagan	tntccctgta	ccagagtccc	ccttgtggca	1080
ngttgaccc	cccttaccag	ttgggtcttc	attttttgtc	cctttccccc	agatccagaa	1140
ataaagtnfa	agggagccgc	aaaaaa				1167

```
<210> 176
<211> 205
<212> PRT
<213> Homo sapien
```

```
<220>  
<221> VARIANT  
<222> (1)...[205)  
<223> Xaa - Any Amino Acid
```

Met	Glu	Asn	Glu	Leu	Phe	Cys	Ser	Gly	Val	Leu	Val	His	Pro	Gln	Trp
1				5					10					15	
Val	Leu	Ser	Ala	Ala	His	Cys	Phe	Gln	Asn	Ser	Tyr	Thr	Ile	Gly	Leu
			20					25					30		
Gly	Leu	His	Ser	Leu	Glu	Ala	Asp	Gln	Glu	Pro	Gly	Ser	Gln	Met	Val
		35					40					45			
Glu	Ala	Ser	Leu	Ser	Val	Arg	His	Pro	Glu	Tyr	Asn	Arg	Leu	Leu	Leu
	50					55					60				
Ala	Asn	Asp	Leu	Met	Leu	Ile	Lys	Leu	Asp	Glu	Ser	Val	Ser	Glu	Ser
65					70					75					80
Asp	Thr	Ile	Arg	Ser	Ile	Ser	Ile	Ala	Ser	Gln	Cys	Pro	Thr	Ala	Gly
			85						90					95	
Asn	Ser	Cys	Leu	Val	Ser	Gly	Trp	Gly	Leu	Leu	Ala	Asn	Gly	Arg	Met
			100					105					110		
Pro	Thr	Val	Leu	His	Cys	Val	Asn	Val	Ser	Val	Val	Ser	Glu	Xaa	Val
		115					120					125			
Cys	Ser	Lys	Leu	Tyr	Asp	Pro	Leu	Tyr	His	Pro	Ser	Met	Phe	Cys	Ala
	130					135					140				
Gly	Gly	Gly	Gln	Asp	Gln	Lys	Asp	Ser	Cys	Asn	Gly	Asp	Ser	Gly	Gly
145					150					155					160
Pro	Leu	Ile	Cys	Asn	Gly	Tyr	Leu	Gln	Gly	Leu	Val	Ser	Phe	Gly	Lys
			165						170					175	
Ala	Pro	Cys	Gly	Gln	Leu	Gly	Val	Pro	Gly	Val	Tyr	Thr	Asn	Leu	Cys
			180					185					190		
Lys	Phe	Thr	Glu	Trp	Ile	Glu	Lys	Thr	Val	Gln	Xaa	Ser			
		195					200					205			

```
<210> 177
<211> 1119
<212> DNA
<213> Homo sapien
```

<400> 177						
gugnacttgc	agccttggca	ggcggaactg	gtcclgggaa	acgaatttgt.	ctgctcyyggc	60
gtcctgggtgc	atcgcagctg	ggclgcttgt	gcgcacact.	gtlttcagaa	ctcctacagc	120
atcgggcttg	gactgcacag	ctctgagggc	gacccagagc	caggggagrc	gatggctgag	180
gcagactct	ccgtacggca	cctcaggtac	aacagacct	lgtctcgctca	cgaactcatg	240
ctcatcaagt	tgggacgatt	cgtgtccgag	ctcgacccca	cccggaacat	cagccttctc	300

```

tcgcagtgcc ctaccgagg gaactcttgc ctggtttctg gctggggctc gctggggaac 360
gatgctgtga ttgccatcca gtcccagact gtgggaggct gggagtgtga gaagctttcc 420
caaccctggc aggggttgtac catttcggca acllccagtg caaggagglc ctgctgcatc 480
ctcactgggt gctcactact gtcactguc tcacccggaa cactgtgate aactagccag 540
caccatagtt ctccggagtc agactatcat gatlaactgtg ctgactgtgc tgtctattgt 600
actaaccatg ccgatgttta ggtgaaatta ggtcacttg guctcaacca tcttggtatc 660
cagttatect cactgaattg agatttctg ctccagtgcc agccattccc acataatttc 720
tgacctacag aggtgagggg tcatalagct ctccaaggat gctggtactc cctccacaaa 780
ttcatttctc ctgttgtagt gaaggtgag cctcttgag cctccraggg tgggtgtgca 840
ggtcacaatg atgaatgtat gatcgtgttc ccattaccca aaguctttaa atccctcatg 900
ctcagtaaac cagggcagg ctagratte ttcatctagt gtatgctgtc cctccatgca 960
accacctcag gactcctgga ttctctgct agttgagctc ctgcatgctg cctccttggg 1020
gaggtgaggg agagggccca tggttcaatg ggalctgtgc agttgtacc ccttaggtgc 1080
tlaataaaca gaagctgtga tgttaaaaaa aaaaaaaaa 1119

```

<210> 178

<211> 164

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1) ... (164)

<223> Xaa = Any Amino Acid

<400> 178

```

Met. Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
1          5          10          15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
20          25          30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
35          40          45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu
50          55          60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
65          70          75          80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
85          90          95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val
100          105          110
Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu
115          120          125
Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg
130          135          140
Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser
145          150          155          160
Pro Gly Thr Leu

```

<210> 179

<211> 250

<212> DNA

<213> Homo sapien

<400> 179

ctggagtgcc	ttgggtgttc	aggccctctg	aggaagcaga	atgcaccttc	tgaggcacc.	60
ccagclgccc	cggccgggg	gatgcggggc	tgggagcacc	cttgccgggc	tgtgattgct	120
gccaggcact	gttcatctca	gtttttctgt	ccctttgctc	cgggcaagcg	cttctgctga	180
aagtccatcat	ctggagcctg	atgtcttca	gaatcaaggc	cccatgctcc	acccgaaaaa	240
aaaaa						250

<210> 180

<211> 202

<212> DNA

<213> Homo sapien

<400> 180

actagtccag	tgtgggtggaa	ttccattgtg	ttggggccca	cacaatggcl	acctttaane	60
tcacccagac	ccggcccttg	cccgctgcgc	acgtgctgc	taacgacagt	atgatgctta	120
ctctgctact	cggaaacat	ttttatgtaa	ttatgtgatg	ctttcttgtc	tataaatgcc	180
tgatttaaaa	aaaaa	aa				202

<210> 181

<211> 558

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(558)

<223> n = A,T,C or G

<400> 181

cccytttkt	naggtttkk	agacacccc	agacctwaan	ctgtgtcaca	gaattcyngg	60
aatgttttag	cagtgctagt	aatttcytcg	taatgattcl	gttattactt	tcctnattct	120
ttattctct	ttctctgaa	gattaatgaa	gttgaaatt	gaggtggela	aatacaaaa	180
ggtagtgtga	tagtataagt	atctaaagtgc	agatgaaagt	gtgttatata	tatccattca	240
aaattatgca	agttagtat	tactcagggt	taactaaatt	actttaatcl	gctgttgaa	300
ctactctgt	cottggctag	aaaaaatlat	aaacaggact	ttgttagttt	gggaagucca	360
attgataata	ttctclgttc	taaaagttag	gctatacata	aattattaa	aaatatggaw	420
ttttattccc	aggaatatgg	kgttcatttt	atgaatatta	cscrygatag	awgtwtgagt	480
aaaycagtc	ttggtwaa	ygtwaatatg	tcmteaataa	acaakgctcl	gaattatttc	540
caaaaaaa	aaaaaa					558

<210> 182

<211> 479

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(479)

<223> n = A,T,C or G

<400> 182

acagggwtck	grggatgcta	agccccrga	rwtygcttga	tccaacccctg	gottwtcttc	60
agaggggaaa	atggggccta	gaagktacay	macatytagy	tggtgogmtg	gcacccctgg	120
cctcacacag	artcccyagt	agctgggact	acaggacac	agtcactgaa	gcaggccctg	180
ttwgcatttc	acgttgccac	ctcccaattc	acattcttcc	atctgtgatg	tccltagtca	240
ctaaggttaa	acttccccc	ccagaaaagg	caactttagat	aaaatcttag	agtactttca	300

tactmttcta agtctctctc cagctctact	kkagagctctm cytggggggtt gatagggaant.	360
ntctcttggc tttctcgaala aartctctat	ycatctcatg tttcaalttgg tarcgacara	420
awtgstgaca aaattcaaat gtctctggtty	maatttaaaa aaaaaa aaaaaa	479

<210> 183

<211> 384

<212> DNA

<213> Homo sapien

<400> 183

aggcgggagc agagagtaaa gccaaagccc	aagaagagtg gcagtgccag cactgggtgcc	60
agtaccagta ccaataaacg tgcagtgcc	agtgcagca ccagtggttg ctccagtgct	120
ggtgccagcc tgacggccac tctcacattt	gggtctcttc ctggcctcgg tggagctgg	180
gccagracca gtggcagctc tgggtgctgt	gggtctcttc acaggtgaga ttttagatnt	240
tgttactcct gccagtgctt ctcttcagc	cagggtgcat cctcagaaac ctactcaaca	300
cagcactcta ggcagccact atcaatcaat	tgaagttgac actctgcaat aratctattt	360
gcatttcca aaaaaa aaaa		384

<210> 184

<211> 496

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(496)

<223> n = A, T, C or G

<400> 184

accgaatttg gaccgctggc ttataagcga	tcatgttynt ccggtatkar ctcaacgagc	60
aggagagatug agtctatarg ctgaagaaat	ttgacccgat gggacaacag acctgctrag	120
cccatcctgc tgggttcttc ccagatgaca	aatactcttg acccgaatc accatcaaga	180
aacgcttcaa ggtgctcatg anccagcaac	cgcgcctctg cctctgaggg tcccttaaac	240
tgatgtcttt tctgccacct gttacccctc	ggagactccg taaccgaact ctccggactg	300
tgagccctga tgcctttttg ccagccatac	tctttggcat ccagtccttc gtygcattg	360
attatgcttg tgtgaggcaa tcatggctgg	atcccccata aagggaacac atttgacttt	420
ttttctcat attttaaat actacmagaw	tattwmagaw waaatgawtt gaaaaactst	480
taaaaaaa aaaaaa		496

<210> 185

<211> 384

<212> DNA

<213> Homo sapien

<400> 185

gctggtagcc tatggcgkgg cccacggagg	ggctcctgag gccacggcac agtgacttcc	60
caagtatcyt gcgcsgcgtc tttacccgtc	cctacctgca gatcttcggg cagatccccc	120
aggagggaacat ggacgtggcc ctcatggagc	acagcaactg ytcgkcgga ccggctctct	180
gggcacaccc tcttggggcc caggcgggca	cctgctcttc ccagtatgcc aactggctgg	240
lqgtgtgtct cctgtctatc ttcctgtctg	tggcgaacat cctgctgggc aactgtctca	300
ttgcctatgtt cagttacaca ttcggcaagg	tacaggggca cagcgatctc tcttgggaag	360
gcgcagcgtt accgcctcat ccgg		384

<210> 186

<211> 577

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (577)

<223> n = A,T,C or G

<400> 186

gagtttagctc	ctccacaacc	ttgatgaggt	cgtctgacgt	ggcctctcgc	ttcatanccg	60
tnccatcgtc	atactgtagg	tttgcaccca	cytcctggca	tcttgggggc	gcnbaatatt	120
ccaggaaact	ctcaatcaag	tcacccgtcg	tgaaacctgt	gggctgggtc	tgtcttcgcg	180
tccgtgtgaa	aggatctccc	agaaggagty	ctcgatcttc	cccacacttt	tgal yacttt	240
attgagtcga	ttctgcatgt	ccagcaggag	gttgtaccag	ctctctgaca	gtgaggtcac	300
cagccctatc	atgccttga	mcgtgcccaa	garcacrgag	ccttggtgtg	gggkkgaggt	360
ctcaccaga	ttctgcattc	ccagagagcc	gtggcacaag	acattgacaa	actcgccag	420
gtggaaaaag	amcactctct	ggargtgcct	ggcgtctctc	gtcmgttggg	ggcagcgctw	480
tccttttgac	acacaaacaa	gttaacaggca	ttttcagccc	ccagaaantt	gtcatcatcc	540
aagatntcgc	acagcactna	tccagttggg	attaaat			577

<210> 187

<211> 534

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (534)

<223> n = A,T,C or G

<400> 187

aacatcttcc	tgtataatgc	tgtgcaatat	cgatccgact	ttgtctggtg	agaatycatw	60
actkggaaaa	amcaacattaa	agcctggaca	ctggattata	aattcaccaat	atgcacacact	120
ctcaacagtg	tgtcaatctg	ctccrynac	tttgtcatca	ccagttctgg	aakaagggta	180
tgccttatcc	acacctgtta	aaaggggcgt	aagcattttt	gattcaacat	cttttttttt	240
gacacagtc	cgaaaaaagg	aaaagttaac	agttatyaat	ttgttagcca	attcaacttc	300
ttcatgggac	agagccatyt	gatttaaaaa	gcnaattgca	taatatlgag	cttyggggagc	360
tgatatttga	gcggaaagag	agcctttcta	cttcaccaga	cacaactccc	tttcatattg	420
ggatgtttna	naaagtwaag	tctctwacag	atgggatgct	tttgtggcaa	ttctgtcttg	480
aggatctccc	agtttattta	ccacttgca	aagaaggcgt	tttctctctc	aggg	534

<210> 188

<211> 761

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (761)

<223> n = A,T,C or G

<400> 188

agaaaccagc	atctctnaaa	acaaacccctc	ataccttggtg	gaacctaat	tgtgtgctg	60
tgtgtgtgctg	cgcactctct	atagacaggc	acatcttttt	tacttttgtc	aaagcttatg	120
cctctttggg	atctatatct	gtgaagctt	taatgatctg	ccatnatgtc	ctgggaacct	180

t.t.g.l.c.c.t.c.t.y	t.g.t.a.a.t.g.g.t	a.c.t.a.g.a.g.a.a.a	a.c.a.c.c.t.a.t.n.t	t.a.t.g.a.g.c.c.a.a	t.c.t.a.g.t.t.n.g.t	240
t.t.t.a.t.t.c.g.a.c	a.t.g.a.a.g.g.a.a.a	t.t.t.c.c.a.y.a.t.n	a.c.a.a.c.a.c.t.n.e	c.a.a.c.t.c.t.c.c	c.t.k.g.a.c.k.a.r.g	300
g.g.g.g.g.c.e.a.a.y	a.a.e.a.g.c.a.a.a.a	c.t.g.a.m.c.a.t.a.a	r.e.e.a.c.a.t.w.a	c.c.t.g.g.t.g.a.g.a	a.r.t.t.g.c.a.t.a.a	360
a.c.a.g.a.a.t.w.r	g.g.t.a.g.t.a.t.a.t	t.g.e.e.t.n.a.c.a.g	c.a.t.r.a.t.t.a.a.a	r.m.g.t.t.w.t.k.t.t	w.t.t.c.t.c.c.o.r.t	420
g.c.a.e.a.a.e.c.a	t.y.t.a.c.n.g.a.c.t	t.c.c.c.g.t.t.g.a.g	t.a.a.l.g.c.c.a.a.g	t.t.g.t.t.t.t.t.t	t.a.t.n.a.t.a.a.a.a	480
c.t.t.g.c.c.t.t.t	a.t.t.a.c.a.t.g.t.t	t.n.e.a.a.y.t.g.y.t	g.t.g.g.t.g.g.g.c	a.e.e.a.t.a.t.t.g.a	a.a.t.g.a.t.g.g.a.a	540
c.t.g.a.c.t.g.e.l.a	a.a.g.u.t.g.t.a.c.a	a.a.t.a.a.g.c.a.g.t	g.t.g.c.c.t.a.a.c.a	a.g.c.a.a.c.c.e.y	t.a.a.t.g.t.t.g.a.c	600
a.t.g.c.t.t.a.a.t.t	c.a.c.a.a.t.g.c.t	a.a.l.l.c.c.a.t.t.a	t.a.a.a.t.g.t.t.t.g	c.t.a.a.a.t.a.c.a	c.t.t.t.g.a.a.c.t.a	660
t.t.t.t.t.c.t.g.t.n	t.t.c.c.c.a.g.a.g.c	t.g.a.g.a.t.n.t.t.a	g.e.t.t.t.t.a.t.g.t	a.g.t.a.t.n.e.a.g.c	g.a.a.a.a.a.n.t.a.c	720
g.a.a.a.a.t.a.a.t.a	a.c.a.t.t.g.a.a.g.a	a.e.e.a.n.a.n.a.a.a	a.a.a.n.a.a.a.a.a	a		761

<210> 189

<211> 482

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(482)

<223> n = A,T,C or G

<400> 189

t.t.t.t.t.t.t.t.t	t.t.t.g.c.g.a.t.n	c.t.a.c.t.a.t.t.t.t	a.t.t.g.c.a.g.g.e.n	y.t.g.g.g.g.g.t.g.t	a.t.g.c.a.c.c.g.c.a	60
c.a.c.c.g.g.g.g.c.t	a.t.n.a.g.a.a.g.c.a	a.g.a.a.g.g.a.a.g.g	a.g.g.g.g.g.g.g.c.a	c.a.g.c.c.c.c.t.t.g	c.t.g.a.g.c.a.a.c.a	120
a.a.g.c.c.g.c.c.t.g	c.t.g.c.c.t.t.c.t.c	t.g.t.c.t.g.t.c.t.c	c.t.g.g.t.g.c.a.g.g	c.a.c.a.t.g.g.g.g.a	g.a.c.c.t.t.c.c.c.c	180
a.a.g.g.c.a.g.g.g.g	c.c.a.c.c.a.g.t.c.c	a.g.g.g.g.t.g.g.g.a	a.t.e.c.a.g.g.g.g.g	t.g.g.g.a.n.g.t.g.t	g.u.a.t.a.a.g.a.a.g	240
t.g.a.t.k.y.g.c.a.u	a.g.g.c.c.a.c.c.c.g	g.t.a.c.a.g.a.c.c.c	c.t.c.g.g.c.t.c.c.t	g.a.c.a.g.g.t.n.g.a	t.t.t.c.g.a.c.c.a.g	300
g.t.c.a.t.t.g.t.g.c	c.c.t.g.c.c.c.a.g.g	c.a.c.a.g.c.g.t.a.n	a.t.c.t.g.g.a.a.a.a	g.a.c.a.g.a.a.t.g.c	t.t.t.c.c.t.t.t.t.c	360
a.a.a.t.t.t.g.g.c.t	n.g.t.e.a.t.n.g.a.a	n.g.g.g.c.a.n.t.t.t	t.c.c.a.a.n.t.t.n.g	y.c.t.n.g.g.t.c.c.t	g.g.t.a.c.n.c.t.g	420
g.t.t.c.g.g.c.c.c.a	g.t.c.c.n.c.g.t.c	c.a.a.a.a.a.n.t.a.t	t.c.a.c.c.c.n.a.c.t	c.c.n.a.a.t.t.g.c.t	t.g.c.n.g.n.c.n.c.c	480
c.c						482

<210> 190

<211> 471

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(471)

<223> n = A,T,C or G

<400> 190

t.t.t.t.t.t.t.t.t	t.t.t.t.a.a.a.c.a	g.t.t.t.t.t.c.a.c.a	a.c.a.a.a.a.t.t.t.a	t.t.a.g.a.a.g.a.a.t	a.g.t.g.g.t.t.t.t.g	60
a.a.e.a.c.t.c.t.c.y	c.a.t.e.c.a.g.t.g.a	g.a.a.c.l.a.c.c.a.t	a.c.a.c.c.a.c.a.t.t	e.c.a.g.c.t.n.g.g.a	a.t.g.t.n.c.t.c.c.a	120
a.a.t.g.t.c.t.g.g.t	c.a.a.a.t.g.a.t.a.c	a.a.t.g.g.a.a.c.c.a	t.t.c.a.a.t.o.t.t.a	c.a.c.a.t.g.c.a.c.g	a.a.g.a.a.c.a.a.g	180
c.g.c.t.t.t.t.g.a.c	a.t.a.c.a.a.t.g.c.a	c.a.a.a.a.a.a.a.a.a	a.g.g.g.g.g.g.g.g.g	g.a.u.c.a.c.a.t.g.g	a.t.t.a.a.a.a.t.t.t	240
t.a.a.g.t.a.c.t.c.a	t.c.a.c.a.t.a.c.a.t	t.a.a.g.a.c.a.c.a.g	t.t.c.t.a.g.t.c.a	g.t.c.n.a.a.a.a.t.c	a.g.a.a.c.t.g.c.n.t	300
t.g.a.a.a.a.a.t.t.t	c.a.t.g.t.a.t.g.c.a	a.t.c.c.a.a.c.c.a.a	a.g.a.a.c.t.t.n.a.t	t.g.g.t.g.a.t.c.a.t	g.e.n.t.n.c.c.t.a	360
c.t.a.c.a.t.c.n.a.c	c.t.t.g.a.t.c.a.t.t	g.c.c.a.g.g.a.a.c.n	a.a.a.a.g.t.t.n.a.a	a.n.c.a.u.n.c.n.g.t	a.c.a.a.e.a.a.n.a.a	420
t.c.t.g.t.a.a.t.t.n	a.n.t.c.a.a.c.c.t	c.c.g.t.a.c.n.g.a.a	e.e.a.t.n.t.t.n.t	t.a.t.a.c.a.c.t.c.c	c	471

<210> 191

<211> 402

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (402)

<223> n = A,T,C or G

<400> 191

gagggattga	agggtctgtc	tastgtoggm	ctgttcagcc	accaactcta	acaagtttgt	60
gtcttcnact	cactgtctgt	aagcttttta	ccccagacwg	tatcttcata	aatagaccaa	120
attcttcaco	agtcacatct	tctaggacct	ttttggattc	agttagtata	agctcttccc	180
cttcctttgt	ttagacttca	tctggtaagg	tcttaagttt	tgtagaaagg	aattyaattg	240
ctcgtttctc	aacaatgtcc	tctccttgaa	gtatttggct	gaacaaacca	cctaaagtcc	300
ctttgtgcac	ccatttttaa	tatacttaac	agggcattgk	tncaactagg	tcaattctgc	360
aagagtcate	tgtctgcaaa	agttgogtta	gtatctctgc	ca		402

<210> 192

<211> 601

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (601)

<223> n = A,T,C or G

<400> 192

gagctcggat	ccaataatct	ttgtctgagg	gcagcacaca	tatncagtgc	catggnaact	60
ggtctacccc	acatgggagc	agcatgcrgt	agntatataa	ggtcattucc	tgagccagac	120
atgcytyttt	gaytaccgtg	tgcraagtgc	tggtgattcl	yaacacacyt	ccatcccggt	180
cttttctgga	aaaactggca	cttkctctga	actagcarga	catcacttac	aaattcaccc	240
acagacact	tgaagggtgt	aacaaagcga	ytcttgcatt	gctttttgtc	ctccgggcac	300
cagttgtcaa	tactaacccg	ctggtttgcc	tccatcacat	ttgtgatctg	tagctctgga	360
tacatctcct	gacagtactg	aagaacttct	tctttctggt	caaaagcacc	tcttggtgcc	420
tgtcagatca	ggttcccatc	tcccagtcyg	aatgttcaca	tggcatattt	taattcccac	480
aaaacattgc	gattttaggc	tcagcaacag	caaatcctgt	tccggcattg	gctgcaagag	540
cctcagatga	gacgggcagc	gccaaaggcag	gcgcagtgag	ccccaccagc	agcagaagca	600
s						601

<210> 193

<211> 608

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (608)

<223> n = A,T,C or G

<400> 193

atacagccca	natccracca	cgaagatgag	cttgttgact	gagaacctga	tgcggtaact	60
ggtcccgctg	tagcccccag	gactctccac	ctgctggaag	cggttgatgc	tgcactcytt	120
cccaacgcag	gcagmagcgg	gscgggtcaa	tgaactccny	tctgggcttg	gggtkgacgg	180
tkaagtgcag	gaagaggtct	accacctcgc	gggtccaccag	gatgtcccgac	tgtgaggagac	240
ctgcagcga	actcctcgat	ggltcatgag	gggaagcga	tgaagccccag	ggccttgccc	300

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agaaccttcc gactgttctc tggugtcacc tgcagctgct gccgctgaca ctggguctcg      360
gaccagcgga caaacgggct tgaacagccg caccctcccg atgcccagtg tctcgcgctc      420
caggammugac accagcgtgt ccaggtcaat gtcgggtgaag cccctccgcg gtralgycgt      480
ctgacgtggt tctgtcgatg ttctccaggc ccagcctcgc cagctggcgt tcatcgaaga      540
gtcgcgcttg cgtgagcagc algaaggcgt tgtcggctcg cagttcttct tcagggaactc      600
cacgcaar.                                     608

```

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<210> 194
<211> 392
<212> DNA
<213> Homo sapien

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<220>
<221> misc_feature
<222> (1) ... (392)
<223> n = A,T,C or G

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<400> 194
gaacgctgga accttgcttc gcaatctgct tgcctggcagg gaataccttg gcaagcagyt      60
cragtccgag cagccccaga ccgctgcgcg cngagcctaa gctgcctct gcccttccrc      120
tccgcctcaa tgcagaacca gtaglgggag cactgtgttt agagltcaga gtgaacactg      180
tttgatttta cttggggacl tctctgtta tatagcttt cccaatgcta atttccaaac      240
aacaacaca aaataacatg ttgctctgtt aagttgtata aaagtaggty attctgtatt      300
taaaqaaant attactgtta catatactgc ttgcaatttc tctatttatt gktnctatgg      360
aaataaatat agttatttaa ggttgtrant. cc      392

```

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<210> 195
<211> 502
<212> DNA
<213> Homo sapien

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<220>
<221> misc_feature
<222> (1) ... (502)
<223> n = A,T,C or G

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```

<400> 195
cccttkgagg ggtkaggkyc cagtttccgc atqaaagaaa caggccagga gaagtgcgtg      60
ccgagctgag gcagatgttc ccaacagtga cccragagcc styggatata gtycttgacc      120
cctcncaagg aaagacccca ttctggggac atgggctgga gggcaggacc tagaggcacc      180
aagggaaggc cccattccgg ggtgtgtccc cgaggaggaa gyyaaggggc tctgtgtgrr      240
cccnasgagg aagagggcct gagtccctgg atcagacacc ccttccagty tatccccaca      300
caantgcaag ctaccccaag tccccctcca gtccrcttcc atcacactg amcggccact      360
gscscacacc caccagagc acgccacccg ccctggggar tgtgctcaag gartcgcneg      420
gcacgtgga catctgtcc cagaaggggg caggaatctcc aatagangga ctgarcmatt      480
gctnaneaaa aaaaaaaa aa                                     502

```

```

<210> 196
<211> 665
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (665)

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<223> n = A,T,C or G

<400> 196

gggtacttgg	tctcattgcc	accacttagt	ggatgkcat	tagaaccatt	ltgtctgctc	60
ccctcggag	ccttgcgcag	agcggacttt	gtantgttg	gagaaataact	gctgaattctt	120
wagctgtttk	gagttgattt	gcaccactgc	acccacacac	tcaatatgaa	aaayawttga	180
actwatttat	tctcttgtga	aaagtatcac	aatgaaaath	ttgttcatac	tgtat.tkac	240
aagtatgatg	aaaagcaawa	gatatatatt	cttttattat	gttaaatfat	gattgccatt	300
actaatcggc	aaantgtgga	gtgratggtc	ttttcacagf	aatatgtgac	ttttgtaact	360
tactttggtt	attttattgg	aatgatgta	caaaattctt	aatttaagar	aatggatagt	420
watatatttt	tcattaatct	ctttcctkgt	ttacgtwaat	tttgaanaaa	wtgcatgatt	480
ttttgacaga	aatcgatctt	gatgctgtgg	aagtatgttg	acccacacac	ctatgagttt	540
ttcttagant	gtotaaaggt	tgtagcccat	ctaaacttca	agaaanaaat	gacnacatac	600
tttgcaatca	ggctgaaalg	tggcatgctn	ttctaattcc	aactttataa	actagcaaan	660
aagtg						665

<210> 197

<211> 492

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (492)

<223> n = A,T,C or G

<400> 197

ttttnttttt	ttttttttgc	aggaaggatc	ccattttatcg	tggatgcatt	ttcacaatat	60
atgttttattg	gagcgatcca	ttatcagtga	aaagtatcca	gtgtttcataa	nattttttagg	120
aaggragatt	ccacagaaac	gctngtcngc	ttgacgtttt	acctcgtana	gatnacagag	180
aatatcgttc	naaccagtaa	acneggant	tacttttcaa	aaatattaat	ccaaactgaa	240
caaaattcta	ccctgaatct	tactccatcc	aatkattgga	ataanaagtc	gcagtgatac	300
atktcttttc	gaactttaga	ttttctagaa	aatatgttaa	tatgtgacag	gaagagctct	360
tgttcaaaa	tacaacnaag	caatgtttcc	ttaccatagg	ctttaattcc	aattttgatc	420
catctcaact	ccatcacggg	agtcaatgct	acctgggaca	cttgtatttt	gttcatnctg	480
ancntggctt	aa					492

<210> 198

<211> 478

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (478)

<223> n = A,T,C or G

<400> 198

tttnttttgn	attcactct	gtannaanta	ttttcattat	gttttattana	aaaatatnaa	60
tgtntccarn	acaaatcatn	ttactntagt	aagagggcan	ctacattgta	caacatacac	120
tgagtatatt	tggaaaagga	caagtlttaa	gtanacncat	attgucganc	atannacatt	180
tatacatggc	ttgattgata	tttagcacag	caaaactga	gtgagttacc	agaaanaaat	240
natatagtcc	aatcngattt	aagatagaaa	acagatncta	tggtaatan	catntgtag	300
gagttgtggc	tttatgttta	ctgaaagtra	atgcagttcc	tgtacaagga	gatggccgta	360
agcattctta	tactctact	ccatgggtta	gaatcgtaga	cttatgttta	catatgtncx	420

gggtacgaat tgtgttaagt taatttatgg agaggtccan gagaaaaatt tgatncaa 478

<210> 199
 <211> 482
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> {1}...{482}
 <223> n = A,T,C or G

<400> 199
 agtgacttgc cctccacaa aaccccttga tcaagtttgt ggcactgaca atcagaccta 60
 tgcctagttc tgcctatctc tgcctatctc atgcagactg gaggggacca azaaggggca 120
 tcaactcccg ctggtattat ttggagccct caaatctatt cctacttgta cggactttga 180
 agtgattcag ttctctctac ggaatgagaga ctggctcag aatctctca tgcagcttta 240
 tgaagccnac tctgaacacg ctggttacct agatgagaa ncagagaaat aaagtctaga 300
 aatcttaact ggagaaaaag aggcttttng ctgggggacc tccatttgaa ccttctctta 360
 anggacttta agaananaact accaratgtt tctngtatcc tggcaccngg ccgttctantg 420
 aactnqacn ncacccctct ggaatanant cttagcngrn tctgaactt gctctctctg 480
 ga 482

<210> 200
 <211> 270
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> {1}...{270}
 <223> n = A,T,C or G

<400> 200
 cggccgcgaag tgcactcca gctggggccg tggggagcaa gattctgcca gcagttggtc 60
 cgactgcgcg gacggcgccg ggcacagctg caggtgcagc gctgggcgct ggggtcttgc 120
 agggctgagc tgcagccgca gaggctcgtg cagcgcacac gaccttgacg ccgtcgggga 180
 cagccgggac agagcccggt gaangcggga ggcctcgggg agccctcggg gaagggcgcc 240
 ccgagagata cgcaggtgca ggtggccgcc 270

<210> 201
 <211> 419
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> {1}...{419}
 <223> n = A,T,C or G

<400> 201
 tttttttt ttttggatc tactgagagc acagcaggtc agcaacaagt tlattttgca 60
 gctagcaagg taacagggta gggcatggtt acatgttcag gtcaccttcc tttgtcgtgg 120
 ttgattgggt tgtctttatg ggggcggggt ggggtagggg acaacgaagc anaantaaca 180
 tggagtggtt gcacccctcc tttgaaccc ggttccnaaa gcttggggca gttcacctgg 240

tctgtgacccg	tcattttctt	gacatcaabg	ttattagaag	tcaggatata	ttttagagag	300
tcactgtnt	ctggaggag	attagggttt	cttgcccaaa	tcacaaacaa	atccacatga	360
aaaagtggg	tgatncangt	acngaatacc	gagngcatan	ttctcatant	cggtggcca	419

<210> 202

<211> 509

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(509)

<223> n = A,T,C or G

<400> 202

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tggcacttaa	tccattttta	tttcaaaatg	tctacaaant	tttaatttnc	cattatacng	120
gtatctttnc	aaaatctaaa	ntttattcaa	atntnagcca	aantccttac	ncaaatnnaa	180
tacnncraaa	aatcaaaaat	atactntttt	ttcagcaaac	ttngtccat	aaattaaaaa	240
aataatatac	gctgggtgtt	tcaaaagtaca	attatcttaa	cactgcaaac	ahnttttnaa	300
ggaaactaaa	taaaaaaaa	cactnccgca	aaggttaag	ggaacaaaca	attcctttta	360
caacancnnc	nattataaaa	atcatatctc	aautcttagg	ggatataata	cttcaacang	420
ggatcttaac	ttttactnca	ctttgtttat	ttttttanaa	ccattgtntt	gggccaaca	480
caatggnaat	ncnccnnc	tggactagt				509

<210> 203

<211> 583

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(583)

<223> n = A,T,C or G

<400> 203

tttttttttt	ttttttttga	ccccctcttt	ataaaaaaca	agttacccatt	ttattttact	60
tacacatatt	tattttctaa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataatct	ttaggaatta	gcttaaaatc	tgcctaaagt	180
gaaaatcttc	tctagctctt	ttgactgtaa	atttttgaat	cttgtaaaac	atccaaattc	240
atttttcttg	tctttaaaat	tatctaattt	tccatttttt	tccctatttc	aagtcaattt	300
gcttctctag	cctcatcttc	tagctcttat	ctactattag	taagtggctt	ttttcctaaa	360
aggggaaaaa	ggaagagana	atggcaccac	aaacaaacat	tttatattca	tatttctacc	420
tacgttaata	aaatagcatt	ttgtgaagac	agctcaaaag	aaggccttaga	tctttttatg	480
tccatttttag	tactataaag	atctcnaaag	tgcagaatg	caaaagggtt	gtgaacattt	540
attcaaaagc	taataataag	tatttcacat	atcatctttt	ctg		583

<210> 204

<211> 589

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(589)

<223> n = A,T,C or G

<400> 204

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	120
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	180
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	240
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	300
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	360
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	420
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	480
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	540
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	589

<210> 205

<211> 545

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (545)

<223> n = A,T,C or G

<400> 205

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	120
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	180
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	240
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	300
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	360
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	420
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	480
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	540
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	545

<210> 206

<211> 487

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (487)

<223> n = A,T,C or G

<400> 206

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	120
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	180
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	240
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	300
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	360
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	420
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	480

ttctaaaa

487

<210> 207

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(332)

<223> n = A,T,C or G

<400> 207

tgaattggct	aaaagaatgc	atcttttanaa	cuaggaactc	ttatttcttc	cccttcaaaa	60
tcacatagat	tcaatcccaa	atcctattta	aagacctgac	agcttgagaa	ggctcactact	120
gcatttatag	gacctcttg	tggttctgct	gltacntttg	aantctgaca	atccttgana	180
atccttgcat	gcagaggagg	taaaaggcat	tggattttca	cagaggaana	acccagcgca	240
gaaatgaagg	ggccaggctt	actgagcttg	tcccttgag	ggctcatggg	tgggacatgg	300
aaaagaaggc	agcctaggcc	ctggggagcc	ca			332

<210> 208

<211> 524

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(524)

<223> n = A,T,C or G

<400> 208

agggcggtgg	gcggaggggc	ttactgtttt	gtctcagtaa	caataaatac	aaaaagactg	60
gttgtgttcc	ggccccatcc	caaccagang	ttgatttccc	ttgtgtgcag	agtgaactgat	120
tttaaaggac	atggagcttg	tcacaatgtc	acaatgtcac	agtgtgaggg	gcacactcac	180
tcccgcgtga	ttcacattta	gcaavcaca	atagctcatg	agtcacatac	tgtaaatact	240
tttggcagaa	taccttttga	aacttgacga	tgaatactaa	gatccaaagt	atttcccaa	300
gtaaatagaa	gtgggtcata	atattaatca	cctgttcaca	tcagcttcca	tttacaagtc	360
atgagcccag	acactgacat	caaaactaagc	ccacttagar	tcttcacca	cagtcctgtcc	420
tgtcctcaga	caggaggctg	tcaccttgac	caaattctca	ccagtcacac	atctatccaa	480
aaaccattac	ctgatccact	tcgggtaatg	caccaccttg	gtga		524

<210> 209

<211> 159

<212> DNA

<213> Homo sapien

<400> 209

gggtgaggaa	atccagagtt	gcaatggaga	aaattccagt	gtcagcattc	tlgctccttg	60
tggcctctcc	ctacactctg	ggcagagata	ccacagtcac	acctgagagc	aaaaaggaca	120
caaaggactc	tgcacccaaa	ctgccccaga	ccctcttcca			159

<210> 210

<211> 256

<212> DNA

<213> Homo sapien

<220>
 <221> misc feature
 <222> (1) ... (256)
 <223> n = A,T,C or G

<400> 210
 acctccctggc agacaaaggu agaggagaga gct.ctgttctg ttctgtgttg ttgaactgcc 60
 actgaatttc ttcccaattg gactcttaca tggcatttga gggactaatg gaaaaacgta 120
 tggggagatt. ttanccaatt tangtntgtt aatggggaga ctggggcagg cggggagagat 180
 ttgcaygggtg naaatgggan ggct.ggtttt ttanatgaac agggacatag gaggt.aggca 240
 ccaggatgct. aactca 256

<210> 211
 <211> 264
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (264)
 <223> n = A,T,C or G

<400> 211
 acattgtttt. tttagatata agcattgaga gagctctctt taacttgaca caattggaagg 60
 actggaacac ataccacat cttt.gttctg agggataatt ttctgataaa gtcttgctgt 120
 atattcaage acatctgtta tatattattc agttcctatc ttatagctta gtttaaggaga 180
 ggggagatac attongaaag aggaactgaa gaaatartca agtnggaana cagaaaaaga 240
 aaaaaaggag caaatgaga gcct 256

<210> 212
 <211> 328
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (328)
 <223> n = A,T,C or G

<400> 212
 acccaaaaat ccaatgctga atatttgggt tcattatttc canattcttt gattgtcaaa 60
 gyatttaatz ttgtctcagc ttgggcactt cagttaggac ctaaggatgc cagccggcag 120
 gtttatctat gcagcaacaa tattcaagcg cgacaaacagg ttatcgact tgcacggcag 180
 tttaatttca ttcccatcga ctggggatcc ttatcatcag ccagagagat tgaattttt 240
 cccctacnac tctttactct ctgganaggy ccagtgggtg tagctataag cttggccaca 300
 ttttttttct ctttatttct ttgtcaga 328

<210> 213
 <211> 250
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature

<222> {1}...{250}

<223> n = A,T,C or G

<400> 213

atttatgagc agagcgacat atccnagtgt agactgaata aaactgaalt ctctccagtt	60
taaagcatfg ctcaactgaag ggatagaagt gactgccagg agggaaagta agccaaaggct	120
cattatgccu aagganatat acatttcaat tctccaaact tcttctcat tccaagagtt	180
ttcaatattt gcctgaacct gctgatcane catgttaana sacaaatata tctctnacct	240
tctcatcggt	250

<210> 214

<211> 444

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{444}

<223> n = A,T,C or G

<400> 214

accagaatc caatgctgaa tatttggttt cattattccc agatctcttc attgtcaaag	60
gatttaattg tctctcagct tgggcacttc agttaggacc taaggatgcc agccggcagg	120
tttatatatg cagcaacaa. attcaagcgc gacaaacagt tattggaact gccgcacgt	180
tgaatttcac tccatttgac ttgggtctct tatcatcagc ctagagagatt gaaatttcac	240
ccctacgact cttactctc tggagagggc cagtgtcgt agctataagc ttggccacct	300
ttttttttt ttctctctt tgcagagat gcgattcctc calatgctan aaaccacacg	360
agtgaatttt acaaaattcc tataganatt gtgaatcaca ccttacctat agttgccatt	420
actttgctct cctaatata cctc	444

<210> 215

<211> 366

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{366}

<223> n = A,T,C or G

<400> 215

acttatgagc agagcgacat atccaaagtgt anactgaata aaactgaatt ctctccagtt	60
taaagcattg ctcaactgaag ggatagaagt gactgccagg agggaaagta agcraaggct	120
cattatgccu aagganatat acatttcaat tctccaaact tcttctcat tccaagagtt	180
ttcaatattt gcctgaacct gctgatcagg catgttgaga sacaaatata tctctgaacct	240
tctcatcggt aagcagaggc tctaggcaac atggacata gcgaanaaaa aacttagtaa	300
tccaagctgt tctctacact gtaaccaggt tccaaccac ggtggaaate tcttataact	360
ggtgcc	366

<210> 216

<211> 260

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)... (260)
 <223> n = A,T,C or G

<400> 216
 ctgtataaac agaatccac tgcangaggg agggccgggc caggagaatc tccgcttgtc 60
 caggacaggg gcttaaggag ggtctccaca ctgctnntaa gggctnttnc atttttttat 120
 taataaaaag tnnaduaagg ctcttctcaa cltttttccc ttnggctgga aaatttaaa 180
 atcaaaatt tctnaagtt ntcangctat catataaccc ntatcctgaa aaagcaccat 240
 aattcttccc tccctcctt 260

<210> 217
 <211> 262
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (262)
 <223> n = A,T,C or G

<400> 217
 acctacgtgg gtaagtttan aatggtata atttcaggaa naggaacgca tataattgta 60
 tottgctat aattttctat ttttaaaagg aaatagcaaa ttgggggggg ggggaatgtag 120
 ggcatctaac agtttyagca aatgcaatt aaatytgga ggacagcact gaaaaatttt 180
 atgaataatc tgtatgatta tctgtctcta gactagatt ataattagcc acttacccta 240
 atatccttca tgcctgtaaa gt 262

<210> 218
 <211> 205
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (205)
 <223> n = A,T,C or G

<400> 218
 accaagggtgg tgcattaccg gaantggatc aagacarca tngtggcua cccrtgagca 60
 cccctatcaa ctcccttttg tagtaaatc ggaaccttg aaatgacrag gccagactc 120
 aggcctcccc agttctactg acctttgtcc ctangtntna ngtcaggggt tgcaggaaa 180
 anaatcagc agacacaggt gtaaa 205

<210> 219
 <211> 114
 <212> DNA
 <213> Homo sapien

<400> 219
 tactgttttg tctcagtaac aataatatac aaaagartgg ttgtgttccg gccctatcca 60
 acccgaagt tgatttctct tgtgtgcaga gtgactgatt ttaaaggaca tggg 114

<210> 220
 <211> 93

<212> DNA

<213> Homo sapien

<400> 220

actagccagc acaaaaggca gggtagcctg aattgcttgc tgcctcttcau atttctttta 60
aaataagcat ttagtgctca gtcctactg agt 93

<210> 221

<211> 167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{167}

<223> n = A,T,C or G

<400> 221

actangtgcg ggtgcgcaca atatattgtc gctattccct tcatcttggg ttccatgagg 60
tcttttgcgc agcctgtggc tctactgtag taagtttctg ctgatggga gccaguatgc 120
ccccactac ctccctgac gctccccana aatcacccaa cctctgt. 167

<210> 222

<211> 351

<212> DNA

<213> Homo sapien

<400> 222

agggcctggt gcggaggggc gtactgacct cattagtagg aggatgcatt ctggcacccc 60
gtttttcacc tgtcccccaa tcttcaaaag gccatcttgc ataaagtcaa caacagataa 120
atgtttgctg atttaaggga tggatgaaaa aaattatata tgaatttttg cataatccaa 180
ttttctcttt tataatttcta gaagangttr ctttgagcct attagatccc gggatctctt 240
taggtgagca tgaattagaga gtttgtaggc tctttttaca tatacttggc atatttgagt 300
ctcgtatcaa aacaatagat tggtaagggt ggtatttctt cattgataag t. 351

<210> 223

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{383}

<223> n = A,T,C or G

<400> 223

aaacacacaa aacaaaaaaa acattcttcc attcagaaaa attatcttag ggaactgatat 60
tggtaattat ggtcaattta atwrtttkt ggggcatttc cttaacttgt cttgacagga 120
ttaaaatgtc tgggcacaaa ttttgtattc talttggaga cttcttctca aaagtaatgc 180
tgcuaaaggga agtctaaggga attagttagt ttcctmccac ttgtttggag tgtgctattc 240
taaaagattt tgaatttctg gaatgacac tatattttaa ctttggtagg ggaanagtt 300
ataggaccac agtcttccct tctgatactt gtaatttcat ctttatttgc atttattttg 360
accatttagc tatatgttta aaa 383

<210> 224

<211> 320
 <212> DNA
 <213> Homo sapien

<400> 224

CCGCTGAAGG	CTTCTTGTTA	GAAATAGTA	CAGTTACAC	CACTGGGAA	AACAAAAGA	60
AAAAGTTTGT	GACATGTAY	TAGGGAGTGT	GTACCCCTTA	CTCCCATCA	AAAAAAAT	120
GGATACATGG	TAAAGGATA	RAAGGGCAAT	ATTTATCAT	ATGTTTAAA	AGAGGAGGAA	180
GAGAAAATAC	TACTTTCTCT	AATCGGAAGC	CCCTAAGGT	GCTTTGATC	TGAAGGACAC	240
AAATGTGGCC	GTCCATCTC	CTTTAAGTT	GCAATGATTC	GAACCGGTA	CTGTTGAGT	300
TTTAACTCM	GCATTTGTA					320

<210> 225
 <211> 1214
 <212> DNA
 <213> Homo sapien

<400> 225

GAGGACTGCA	GCCCGCCTC	GCAGCCCTGG	CAGGCGGCA	TGGTCATGG	AAACGAATG	60
TTCTGTCTGG	GGTCTCTGG	GCATCCGCA	TGGGTGTCT	CAGGCGGCA	CTGTTTCCAG	120
AATCTCTACA	CCATCGGGCT	GGGCTGTCA	AGTCTTGAG	CCGACCAAG	GCCAGGGAGC	180
CAGATGGTGG	AGGCGAGCT	CTCGTACGG	CAACAGAGT	ACACAGACC	CTGTCTCGT	240
AACTACCTCA	TGCTCATCA	GTCTGACGA	TCCTGTCTC	AGTCTGAC	CTCTCGGAGC	300
ATCAGCATTG	CTTCTGAGT	CCCTACCGG	GGGAACTCT	GCCTCTTCT	TGGCTGGGCT	360
CTGCTGGTGA	ACGGCAGAA	GCCTACCTG	CTGAGTGG	TGACGTGT	GGTGGTGTCT	420
GAGGAGGTCT	GCAGTAACT	CTATGACCG	CTGTACUAC	CCAGCATGT	CTGCGCGGC	480
GGAGGGCAAG	ACAGAGGGA	CTCTGTCA	GGTGAATCT	GGGGGCTCT	GATCTGCA	540
GGGTACTTGC	AGGGCTTGT	GTCTTTCTG	AAAGCTCTT	GTGGCAAGT	TGGGTGTCT	600
GGTGTCTCT	CCAACTCTG	CAATTTCTC	GGTGGTAG	AGGAACTCT	CCAGGCTAGT	660
CACTCTCTGG	GACTGGGAA	CCATGAAT	GACCTCTCA	TACATCTGT	GGAGGAAT	720
CAGGAATAT	TGTTCTCAG	CCCTCTCTC	TCAGGCTCA	GAGTCTAGG	CCCCAGCTCT	780
TCCTCTCTCA	AACTAGGGT	ACAGATCTC	AGCTCTCTC	CCCTCAGAC	CAGGAGTCT	840
GACCTCTCA	CCCTCTCTC	CTCAGATCT	GGGCTCTCA	CCCTCTCTC	TCAGGCTCA	900
GGTCTCTCA	CCCTCTCTC	CTCAGATCT	GGGCTCTCA	CCCTCTCTC	TCAGGCTCA	960
CTCTCTCA	CTCAGATCT	CAAGCTCTC	CCCTCTCTC	CCCTCTCTC	TCAGGCTCA	1020
GTCTCTCA	CTCTCTCTC	AGCTCTCTC	GTCTCTCTC	CCCTCTCTC	TCAGGCTCA	1080
CAGTCTCTC	TTCTCTCTC	TTCTCTCTC	CTCTCTCTC	GGTCTCTCT	TTCTCTCTC	1140
TTCTCTCTC	ATCTCTCTC	AACTCTCTC	AGCTCTCTC	AAAAAAATA	AAAAAAATA	1200
AAAAAAATA	AAAAAAATA					1214

<210> 226
 <211> 119
 <212> DNA
 <213> Homo sapien

<400> 226

CCCCAGTATG	TGAGGGAGA	CGGACCTCA	TGTGACAGC	ACTCTCTCA	GGTCTCTCA	60
AGAACTGGC	CCAGTCTCA	TCATCTCTC	TGACAGTGG	AACTCTCTC	ATAACAGT	119

<210> 227
 <211> 818
 <212> DNA
 <213> Homo sapien

<400> 227

acaattccta	gggacgacca	atgaggacag	gggaatgaacc	cggctctccc	ccagccctga	60
tttttctac	atacgggglc	ccttttcatl	ctttgcacaa	acactgggtt	ttctgagaac	120
acggacggll	cttagacaaa	tttgtgaaat	cttgtgtaraa	ccgggtcttg	caggggagat	180
aattttctct	ctctggagga	aaggtggtga	ttgaraggca	gggagacagt	gacaaaggcta	240
gagaaagcca	cgtctggcct	tctctgaaac	aggttggaac	ggcagacccc	tgaaaacgaa	300
gcttctcccc	ttccaatcag	ccacttctga	gaaccccat	ctaaatttct	actggaaaag	360
agggcctccc	caggagcagt	ccaagagbtt	tcnaagataa	cgtgacaaat	accatctaga	420
ggaaagggtg	cacccctcag	ayagzagcag	agagctlaac	tctggtcgtt	tcacagagaca	480
acctgctggc	tytcttgga	tgcgctcagc	ctttgagagg	ccactacccc	atgaacttct	540
gcacatccart	ggacatgaag	ctgaggacac	tgggcttcan	cactgagttg	tcactgagag	600
gacaggtctt	gcocctcaagc	cggctgaggg	cagcaaccac	tctctcccc	ttctctacgc	660
aaagccattc	ccacaaatcc	agaccatacc	atgaagcaac	gagaccraaa	cagtttggct	720
caagaggata	tgaggactgt	ctcagccctg	ctttgggttg	acacuatgca	cacacacaaag	780
gtccacttct	aggttctcag	cctagatggg	agtctgtgt			818

<210> 228

<211> 744

<212> DNA

<213> Homo sapien

<400> 228

actggagaca	ctgttgaact	tgalcaayac	ccagaccacc	ccaggtctcc	ttcgtgggat	60
gtcatgacgt	ttgacalacc	tttggaaacga	gcctcctcct	tggaagatgg	aaagaccgtgt	120
tcgtggccga	cctggcctct	cctggcctgt	ctcttaagat	gaggagtcc	atttcaatgg	180
taggaaaggt	ggcttctgtaa	aatagaagag	cagtcactgt	ggactacna	aatggcgaga	240
tgtctgggtg	acattggggg	gcttctgggt	aaaagattta	tgagccaaat	attctctggc	300
accagattct	aggccagttt	gttcuactga	agctttctcc	acagcagtrc	acctctgcag	360
gctggcagct	gaatgggttg	ccggtgggtc	tgtggcaaga	tcacactgag	atcgatgggt	420
gagaaaggct	ggatgcttgt	ctagtgttct	tagctgtcac	gttgggtcct	tcaggtttgg	480
ccagacgggt	ttggccactc	ccttctaaaa	ccaggtggcc	ctcttggtga	cagtgaaccc	540
ccgtggctat	cctcggccca	ttccagcagt	cccagttatg	catttcaagt	tlgggggttg	600
ttctttctgt	taatgttctt	ctgtgttgtc	agctgtcttc	atttccctgg	ctaaagcagca	660
ttgggagatg	tgaccagag	atccactcct	taagaaccag	tggcyaaga	cactttcttt	720
cttcaactct	aagttagctgg	tgggt				744

<210> 229

<211> 300

<212> DNA

<213> Homo sapien

<400> 229

cgagtctggg	ttttgtctat	aaagtctgat	ccctcctttt	ctcatccaaa	tcattgtgaac	60
cattacacat	cgaataaaaa	gaaaggtggc	agacttgcce	aacgccaggc	tgacatgtgc	120
tgcagggttg	ttgtttttta	attattatlg	ttggaaaggt	cacccacagt	cctgttcaat	180
ttgtatgtga	cagccaactc	tgayaaaggt	ctattttctc	acctgcagag	gatccagtrt	240
cactagggtc	ctcattgccc	tcacactgga	gtctccgcna	gtgtgggtgc	ccactgaacat	300

<210> 230

<211> 301

<212> DNA

<213> Homo sapien

<400> 230

caquagaaac	aatacaaat	tgaagagtgc	aaagatctca	taaaaatctal	gctgagggaat	60
gagcgacagt	tcaggagga	gaagctlqca	gagcagctca	agcaagctga	ggagctcagg	120

caatataaag tcoctgggtca cactcaggaa cgaagactga cccagtttaag ggaagagttg 180
 cgggaaggga gagatgacct cctctcattg aatgagatc tccaggacct cctcactccg 240
 gntgaaucgg aaaggtccca ggggcaggac clccaaagaa cagacctcgg ccgcyaccac 300
 g 301

<210> 231

<211> 301

<212> DNA

<213> Homo sapien

<400> 231

gcaagcagc tggcaaatct ctgtcaggtc agctccagag aagccattag tcaattttag 60
 caggaactcc aagtcacat ccttggcaac tgggacttg cgcaggtag ccttgaggat 120
 ggcaacacgg gacttctcat caggaagtgg gatgtagatg agctgatcaa gacggccagg 180
 tctgaggatg gcaggatcaa tgatgtcagg ccggttggta cgcgaatga tgaacacatt 240
 tttttttgtg gacatgccat ccatttctgt caggatctgg ttgatgactc ggtcagcagc 300
 c 301

<210> 232

<211> 301

<212> DNA

<213> Homo sapien

<400> 232

agtaggtatt tctgaggaag ttcaacacca aaactggac atagttctcc ttcaagtgtt 60
 ggcagcagcg gggcttccctg attctggaa ataatcttct gtaaatcaac agccacctat 120
 agaagagtc atctgctgtg aaggaagagc agagaactct gggctccgtc gtctgtccc 180
 cgtgctgtac caagtgttgg tgcagacctg ttacctgtcc cactgaaaa tctggctaat 240
 gctctgtgt atcattctg attctgacaa tcaatcaatc atgggctag agcactgact 300
 g 301

<210> 233

<211> 301

<212> DNA

<213> Homo sapien

<400> 233

atgactgact tccagcaag gctctctaa gggtaagtag gaggatcac aggattttag 60
 atgctaaggc cccagagatc gtttgatcca accctcttat ttccagaggg gaaatgggg 120
 cctagaagtc acagagcatc tagctggtgc gctggcacc cgggctcac acagctccc 180
 gagttagctg gactacagc acacagtcac tgaagcaggc cctgttagca attctatgcg 240
 tacaattaa catgagatga gttagagatt tattgagaaa gcaagagaaa atccctatca 300
 c 301

<210> 234

<211> 301

<212> DNA

<213> Homo sapien

<400> 234

aggtcctada catcagagct cactcatgct tgaatgcat ttaaaattca caagcaaga 60
 cattttattc atcatgatgc ttctttttgt ttcttctttt cgtttttttt ttttctcttt 120
 tcaatttcag caacatactt ctcaatttct tcaaggattta aaatctttag ggattgatct 180
 cgcctcatga cagcaagttc aatgtttttg ccacttgact gaaccatttc caggagtgc 240
 ttgatccca gcttaatggt cagatcatct gcttcaatgg ctccgctcag atagttcttc 300

t

301

<210> 235
 <211> 283
 <212> DNA
 <213> Homo sapien

<400> 235

tggggctgtg catcaggcgg gtttgagaaa tattcaattc tcagcagaag ccagaatttg	60
aattccctca tcttctaggg aatcatttar cagggttggg gaggattcag acagctcagg	120
tgctttcact aatgtctctg aacttctgtc cctctttgtt catggatagt ccataaata	180
atgttatctt tgaactgagc ctcataggag agaataaag aactctgagt gatataaca	240
ttagggtattc aaugaaatat tagatttaag ctcacactgg tca	283

<210> 236
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 236

aggtccctcc ccaactgcct gaagcacggt taaaattggg aagaagtata gtgcagcata	60
aatactttta aatcgatcag atttccctaa cccacatgca atcttcttca ccaggaagagg	120
tgggagcagc atcattaata ccaagcagaa tgcgtaatag ataaatacaa tggatatag	180
tgggtagacg gcttcatgag cacagtgtac tgtggtatcg taatctggac ttgggttcta	240
aagcatcgtg taccagtcag aaagcatcna tactcgacac gaacgaatat aaagaacacc	300
a	301

<210> 237
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 237

cagtggtagt ggtggtggac gtggcgctgg tctgtgtgcc ttttttgggt cccgtcacia	60
actcaatttt tgttcgctcc ttttttggct ttccaatttt gtccatctca attttctggg	120
ccttggctaa tccctcatag taggagtcct cagaccagcc atggggatca aacatatect	180
ttgggtagt: ggtgccaaagc tcttcaatgg cacagaatgg atcagcttct cgtaaatcta	240
gggttccgaa attctttctt cctttggata atgtagttca tatccattcc ctcccttate	300
t	301

<210> 238
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 238

gggacaggttt tttttttttt ttttttgatg gtgcagaccc ttgctttatt tgtctgactt	60
gttcacagtt cagccccctg ctccagaaac caacggggcca gctaaggaga ggaggagyc	120
ccttgagact tccggagtcg aggtcttcca gggttcccca gcccatcaat cttttctctg	180
acccccctgcc tgggaaagcag ctccctgggg ggtgggaatg ggtgactaga agggatttca	240
gtgtgggacc cagggtctgt tcttcacagt aggaggtggg agggatgact aatttcttta	300
t	301

<210> 239
 <211> 239

<212> DNA

<213> Homo sapien

<400> 239

ataagcagct agggatttct ttatttagta atgtcctaac ataaaagttc acataactgc	60
ttutgtcaaa ccatgatgct gagcttctgt acanccaga aataactaag agaaggcaaa	120
cataatcct cagagatcaa gaaacattta cacagttcaa ctgtttcaaa atagctcaac	180
attcagccag tsagtagagt gtgaatgcca gcatacacag tatcacgggc cttcaygga	239

<210> 240

<211> 300

<212> DNA

<213> Homo sapien

<400> 240

ggctctaattg aagcagcagc ttccacattt taacgcaggc ttaagggtgat actgtctttt	60
gggatctgcc ctccagtgga accttttaag gaagaaagtgy gcccaagcta agttcccat	120
gctgggtgag ccagatgact tctgttccct ggtcaccttc tccaatgggg cgaatggggg	180
ctgccagggt tctaaatca tgcctcatct tgagcacaac ggtcacctca cctctctcac	240
gctgtgggltg tctttgatg aaaaatacca ctttgttggc cttcttgaag ctataatgtc	300

<210> 241

<211> 301

<212> DNA

<213> Homo sapien

<400> 241

gaggtcttggg gctgaggtct ctgggtctgg aagaggaggt ctgttggagct ggaagccaga	60
cctcttctgga ggaacttcca gcagctatgt tgggtctctt gagggaatgc aacaaggctg	120
ctctcccatg tattggaaaa ctgcaacttg gactraactg gaaggaaagt ctgctgccag	180
tgtgagaac cagcctgagg tgacagaaac ggaagcaaac aggaacagcc agtctttctt	240
tctctctctt gtcatacggc ctctctcag cttctctctt tgtcaggggc ctaaaagggg	300

<210> 242

<211> 301

<212> DNA

<213> Homo sapien

<400> 242

ccgaggctctt gggatgcaac caatcaactt gtttcacgtg acttttatca ccatacaatt	60
tgtggcatct cctcattttc tacattgtag aatcangagt ytaaatataat gtatatcgat	120
gtcttcaaga atatatcatt cctttttcac tagaacctat tcaaatata atcaagaaat	180
cttaatatca acaatatat caagcaaat ggaaggcaga ataactacca taatttagta	240
taagtaccca aagttttata aatcaaaaag cctantgata accattttta gaattcaatc	300

<210> 243

<211> 302

<212> DNA

<213> Homo sapien

<400> 243

aggtaagttc cagtctggag ctcaaaagat ctggatcgag cataggctca tgcagcaat	60
ggtygccccaa gctatgaat cagagggagg ctccatctgg gcctgtaaaa actatgatgg	120

tgacgtgcag	tgggactcty	tggcccaagg	gtatggctct	ctcggcatga	tgaccagcgt	180
gctggtttgt	ccaqatggca	agacagtga	agcagaggct	gcccacggga	ctgtaccctg	240
tcactaccgc	atgtccaga	aaggacagga	gaagtcacac	aatcccattg	cttccatttt	300
t						301

<210> 244

<211> 300

<212> DNA

<213> Homo sapien

<400> 244

gctggtttgt	aagaatgaaa	tgaatgattc	tacagctagg	acttaacctt	gaaatggaaa	60
gtcatgcaat	cccatcttgc	ggatctgtct	gtgcacatgc	ctctgttagag	agcagcattc	120
ccagggacct	tygaacacag	tgacactgta	aggtgtctgc	tccccaagac	acatccctaa	180
aggtgtctga	atggtagaaa	cgtcttccct	ctttatctgc	cctctttatt	tatgtgaaac	240
actgtttgtc	ttttgtgtat	ctttttctaa	ctgtaaagt	caattgtgaa	aatgnaatc	300

<210> 245

<211> 301

<212> DNA

<213> Homo sapien

<400> 245

gtctgagtat	ttaaaatgtt	attgaatatta	tccccaacca	atgttagaag	agaagagggt	60
tatatcttca	gataaaaaat	gaggtgeatt	actatccatt	gaaatcatgc	tcttagaatt	120
aagggcagga	gatattgtca	ttaatgtara	cttcaggaca	ctagagtata	gcagccctat	180
gttttcuaay	agcagagatg	caattaaata	ttgttttagca	tcaaaaaggc	caatcaatac	240
agctaatcaa	atgaagagac	taattttctaa	agcaattctt	tatnatttcc	aaagttttaa	300
g						301

<210> 246

<211> 301

<212> DNA

<213> Homo sapien

<400> 246

ggctctgtct	acaatgcctg	cttcttgaag	gaagtcggca	ctttctagaa	tagctaaata	60
acctgggctt	attttaaaga	actatttcta	gtccagattg	gttttccctat	ggctanaata	120
agtgcttctt	gtgaaaatta	aataaaacag	ttaattcraa	gccttgatat	atgttaccac	180
taacaatcat	actaatata	ttttgaagta	caaagtctga	catgctctaa	agtgaacaac	240
caaatgtgtc	ttacnaaaca	cgttctcaac	aaggtatgct	ttacactacc	aatgtagana	300
c						301

<210> 247

<211> 301

<212> DNA

<213> Homo sapien

<400> 247

aggtcttttg	gcagggtcca	tggatcagag	ctcaaactgg	agggaaaggc	atttcgggta	60
gcctaaggagg	gcgactggcg	gcagcacac	caagggaaggc	naggttggtt	ccccacggcc	120
gtgtcctgtg	tccgggtgcg	acacacaatc	ctcatgggaa	caggatcac	catgcgctgc	180
ccttgatgat	caaggctggg	gttcaagtg	attaaggggag	gcaagttctg	ggttcttgc	240
cttttcaaac	catgaagtca	ggctctgtat	ccttctcttt	cctaactgat	attctaaata	300
a						301

<210> 248
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 248
 aggtccttgg agatgccatt tcagcugaa gactcttctw ttgggaagta caccctcact 60
 attaggaaga ttcttagggg taattttctt gaggaaggag aactagccaa cttaagaatt 120
 acaggaagaa agtgggttgg aagacagcca aagaaataaa agcagattaa attgtatcag 180
 gtacattcca gcctgttggc aartccataa aaacatttca gattttaate ccgaatttag 240
 ctaatgagac tggatttttg ttttttatgt tgtgtgtcgc agagctaaaa actcagttcc 300
 c 301

<210> 249
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 249
 gtccagaggg agcaactggt gctgaactcg gcttgcctcg ctgtgaactt gcacttggag 60
 ccttgargct gctgttctcc ccgaaanacc cgaccagact ccgugatctc cgtcccgccc 120
 ccagggagac acagcagtga cttagagctg gtcgcaact gtgctcctt cctcaccgac 180
 catcgtaatg aatcttcttg aaaaattaat ccaaccatctt ttcaatctct ggatggaaag 240
 actgaatctt tgaactragaa ttgtttgctg aaaaagtga tgtgacttct ttagtcaatt 300
 a 301

<210> 250
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 250
 ggtctgtgac aaggacttgc aggtcttggg aggcgaagtga cccctaacac tacacttctc 60
 cttatcttta ttggcttgat aaacataatt atttctaaca ctgacttatt tccagttgac 120
 cataagcaca ccagctacttc tctctggctg gaatagtaaa ctcaagtatg gtacatctac 180
 ctaaaaguct actatgtgga ataatacata cttaatgaugl attacatgat ttaaagacta 240
 caataaaacc aac/atgctt ataaccataa gaaaaacaa aaagatacat gattgaaacc 300
 a 301

<210> 251
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 251
 gccgaggtcc tacatttggc ccagtttccc cctgcattct ctccagggcc cctgctcat 60
 agacaaacctc atagagcata ggagaactgg ttgcccctgg ggacagggga ctgtctggat 120
 ggcaggggtc ctcaaaaatg ccactgtcac tggcaggaan tgcctctgag cagtacacct 180
 cattgggata aatgaaaagc ttcaagaaat ctccaggttc actctcttga aggtccggaa 240
 cctctggagg ggggcagtgg aatcccagct ccaggacgga tccctgtcga aagatatctt 300
 c 301

<210> 252
 <211> 301

<212> DNA

<213> Homo sapien

<400> 252

gcaaccaatc actctgttcc acgtgacttt taccaccata caatttctgg catttcccca	60
ttttctacat tctagaatca agagtgttaa taatgtata tggatgtctt caagaaatata	120
tcattctttt ttcactaggc acccattcaa atataagtc aagaatctta atatcaaca	180
atatatcaag caaactggaa ggcagaatca ctaccataat ttagtataag taccacaagt	240
tttataatc aaaagcccta atgataacca tttttagat tcaatcatca ctgtagatc	300
a	302

<210> 253

<211> 301

<212> DNA

<213> Homo sapien

<400> 253

ttccctaaga agatgttact ttgttgggtt ttgttccccc tccatctega ttctctgacc	60
caactaaaaa aaaaaaataa agaaaaaatg tgcctgcgtc tgaanaataa ctctcttagct	120
tggtctgatt gttttcagac cttaaaatat aaacttgttt cacaagcttt aatccatgtg	180
gatttttttt cttagagAAC cacaacaacat aaaaaggagca agtcggactg aatactgttt	240
tccatagtgc ccacagggta ttcctcacat ttctccata ggaatatgct tcttcccaag	300
g	301

<210> 254

<211> 301

<212> DNA

<213> Homo sapien

<400> 254

cgctgcgctt ttcccttggg ggaaggggcaa ggcagagggg ggtccaagtg cagcacgagg	60
aacttgacca attccttga agcgggtggg tttaaccctg taaatggga caaaatcccc	120
ccaaatctct tcatcttacc ctgggtggact cctgactgta gaattttttg gttgaaacaa	180
gaaaaaaata aagctttggg cttttcaagg ttgcttaaca ggtactgaa gactgggctc	240
acttaaaactg agccaggaaa agctgcagat ttattaatgg gctgtcttagt gtgcagtgcc	300
t	301

<210> 255

<211> 302

<212> DNA

<213> Homo sapien

<400> 255

agcttttttt ttcttttttt ttcttttttt ttcattaaaa aatagtgttc ttattataa	60
attactgaaa tgtttctttt ctgaatataa atataaatat gtgcaaagtt tgacttggat	120
tgggattttt ttgagttctt caagcatctc cttaatacct caaggggctg agtagggggg	180
aggaaaaagg actggagggtg gaatcttcat aaaaaacaa agtgattgag gcagattgta	240
aacattatta aaaaaaaga aacaaacaaa aatatagaga aaaaaaacac cccaaacac	300
aa	302

<210> 256

<211> 301

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 256
 gtccagaaa acattgaagg tggottccca aagtcctaact agggatarcc cctctagcct 60
 aggaacctcc tccccacacc tcaatccacc aaaccatcca taatgcaccc agataggccc 120
 acccccacaa gcctgggacac cttgagcaca cagttatgac caggacagac tcatctctat 180
 aggcacatag ctgctggcaa actggcatca cctggcttctg ggggatgggg gggcaagtgc 240
 gtggcctctc ggcctgggta gcaagaacat tcagggttagg cctaagttan tctgtttagt 300
 c 301

<210> 257
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 257
 gttgtggagg aactctggct tgcctattaa gtccactga ttttcaactat cccctgaatt 60
 tcccactta tttttgtctt tcaatctgc aggccttaga agaggcttac ctgcctccag 120
 tottaacctag tccagtctac cccctggagt tagaatggcc atcctgaagt gaaaagtta 180
 gtccacttcc tcccttcagt gatttcttctg agnagtgcga atccctgaat gccaccaaga 240
 tottaattct cactcttcta atcttctctc tttagactct ctttaccaccy gagaaggctc 300
 c 301

<210> 258
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 258
 cagcagtagt agatgccgta tgcacgacg cccagcactc ccaggatcag caccagcacc 60
 agggggccag ccaccaggcg cagaagcaag ataaacagta ggctcaagac cagagccacc 120
 cccagggcag caagaatcca ataccaggac tgggcaaat cttcaaagat cttaaccatg 180
 atgtctcggg cattgaggct gtcaataana cgtgatccr ctgctgtatg gtggtgtcat 240
 tgggtgatcc tgggagcgcc ggtggagtaa cgttgggccn tggaaagcag cgccccacc 300
 c 301

<210> 259
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 259

```

ccatataatgc aaacsaatgc agactangcc tcaggcagag actaaaggac atctcttggg      60
gtgtcctgaa gtgatttggg cccctyaggg cagacaacta agtaggaate ccagtgggaa      120
gcaaagccat aggaagccc aggatccctt gtgatcagga agtgggcccag gaaggctctgt      180
tccagctcac atctctctg catgcagcac ggaccyyatg cgcaccactgg gtcttggctt      240
ccctcccatc tttcaagca gtgtcctctg tgagccattt gcaccccttg ctccagggtg      300
c

```

<210> 260
 <211> 301
 <212> DNA
 <213> Homo sapien

```

<400> 260
ttttttttct ccttaaggaa aaaggaaggaa caagtctcat aaaccadac aaqcaatgg      60
aagggtgtct aacttgaaa agattagggg tcactgggtt acaggttata attgaatgaa      120
agaactgtaa cagccacagt tggcatttct atgcraatgg cagcaaacaa cagggttaac      180
tagggcaaaa taataaagt tgtggaagcc ctgataaagt cttaataaac agactgattc      240
actgagacat cagtacctgc ccggggggcc gctcgagccc aattctgccc atatccatca      300
c

```

<210> 261
 <211> 301
 <212> DNA
 <213> Homo sapien

```

<400> 261
aaatattcga gcaaatcctg taactaatgt gtctccataa aaggctttga actcagtga      60
tctgcttcca tccacgattc tagcaatgac ctctcggaca tccagctcc tcttaaggct      120
agcaccact attccatcac attcatcagc aggaataaaa ggctcttcag aagggtcaat      180
ggcgacatcc aatttcttct gataatttag attcctcaca accttctcag ttaagtgaag      240
ggcatgatga tcatcnaaag cccagtggtc acttactcca gactttctgc aatgaagatc      300
a

```

<210> 262
 <211> 301
 <212> DNA
 <213> Homo sapien

```

<400> 262
gaggagagcc tgttacagca tttgtaagca cagaatactc caggagtatt tgtaatgtc      60
tgtgagcttc ttgcgcgaag tctctcagaa atttanaaag atgcaaatcc ctgagtccac      120
cctagacttc ctaaacacaga tctctcgggg ctggaaacct gcactctgca tttgtaatga      180
gggctttctg gtgcacacct aattttgtgc atctttgccc taaatcctgg attagtcccc      240
catcattacc cccacattat aatgggatat attcagagca gatactctcc agcaaaqaat      300
c

```

<210> 263
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (301)
 <223> n - A,T,C or G

<400> 263

tttagcttgt	ggtaaatgac	tcacaaaact	gattttaaaa	tcaagttaat	gtgaattttg	60
aaaactacta	cttaactcta	attccacaata	acaatggcat	taagggttga	cttgagttgg	120
ttcttagtat	tatttatggc	aaataggtct	ttaccacttg	caataaactg	gccacatcat	180
taatgaactga	cttcccagta	aggctctcta	aggggtaaat	angaggatcc	acaggatttg	240
agatgctaag	gccccagaga	tgtttcgatc	caacctcttc	attttcagag	gggaaaatgg	300
g						301

<210> 264

<211> 301

<212> DNA

<213> Homo sapien

<400> 264

aaagacgtta	aaccactcta	ctaccacttg	tggaaactctc	aaagggtaaa	tgaraaaacc	60
aatgaatgac	tctaaaaaon	atatttccat	ttaatggctt	gtagacata	aaanaacaaq	120
gtggatagat	ctagaattgt	aacatttcaa	gaaaacvata	acatttgaca	gatgggnaag	180
ctcaattata	gatgcacagt	tataactaaa	ctaactatagc	agtaaaagaa	tacatttcac	240
acatttcaata	caaattcaat	atcttggctt	gaggacatcc	acaaaatgta	tcacgtgcac	300
a						301

<210> 265

<211> 301

<212> DNA

<213> Homo sapien

<400> 265

tgrccaaagt	atgtgtaagt	gtatccgcac	ccagaggtaa	auctacactg	tcattcttgt	60
cttcttgtga	cgcagtattt	ctctcttggg	gagaagccgg	gaagctctct	cctggctcta	120
catattcttg	gaagtctcta	atcaactttt	gttccatttg	tttcatttct	tcaggaggga	180
ttttcagttt	gtcaacatgt	tctctaacaa	cacttgccta	tttctgtaaa	gaatrcaaaq	240
cagtcraagg	ctttgacatg	tcaacaacca	gcataactag	agcattcttc	agagatacgg	300
c						301

<210> 266

<211> 301

<212> DNA

<213> Homo sapien

<400> 266

taccgtctgc	ccttccctcc	atccaggcca	tctgggaatc	tcattgggtc	ctcctattcg	60
acaccagatc	actcttttct	ctarccacag	gcttgctatg	agcaagagac	acaacctctt	120
ctcttctgtg	ttccagcttc	tttctctgtt	cttccsaccc	cttaayttct	attcctgggg	180
atagagacac	caatacccat	aacctctctc	ctaagctctc	ttataaccca	gggtgcacag	240
caccgactcc	tgacaactgg	taaggccaat	gaactgggag	ctcacagctg	gctgtgcctg	300
a						301

<210> 267

<211> 301

<212> DNA

<213> Homo sapien

<400> 267

aaagagcaca	ggcagctca	gcccgccctg	gccatctaga	ctcagcctgg	ctccatgggg	60
------------	-----------	------------	------------	------------	------------	----

```

gttttcagtg ctgagtcacat ccaggaaagag ctccacctaga ccttctgagg ctgaatcttc 120
atcctcacag gcagcttctg agagcctgat attcctagcc ttgatgggtct ggagtaaaagc 180
ctcattctga ttctctctct tcttttcttt caagttgget tctctcacat cctctctgtc 240
aattcgttc agcttgtctg ctttagccct catttcaga agcttcttct ctttggcatt 300
t 301

```

<210> 268
 <211> 301
 <212> DNA
 <213> Homo sapien

```

<400> 268
aatgtctcac tcaactactt ccagcctac cgtggcctaa ttctgggagt tttcttctta 60
gatcttggga gagctggctc ttctdaggag aaggaggaaag gacagatga accttggatc 120
tcgaagaggga agtctaattg aagtaattag tcaacggtec ttgttttagc tcttgggaata 180
tgctgggtgg ctcagtgggc ctttttggag aaagcaagta ttattcttaa gtagtaacca 240
cttcccatgg ttctacttct taccatcatc aattgtatat catgtattct ttggagaact 300
a 301

```

<210> 269
 <211> 301
 <212> DNA
 <213> Homo sapien

```

<400> 269
taacaaatata cactagctat ctttttaact gtccatcatt agcaccaatg aagattcaat 60
aaaattacct ttattcacac atctcaaaac aattctgcaa attcttagtg aagtttaact 120
atagtcacag accttaataa ttccacattgt ttctatgtc tactgaaat aagttcacta 180
ctttcttgga tttcttttae aaatcttat taaaattctt ggtattatca cccrcaacta 240
tacagttagc caaccacctt atgtagcttt tacatgatag ctctgtagaa gtttcacatc 300
t 301

```

<210> 270
 <211> 301
 <212> DNA
 <213> Homo sapien

```

<400> 270
cattgaagag cttttgcgaa acatcagaac acaagtgtct ataaaattaa ttaaggcetta 60
cacaagaata catattctt ttatttctaa ggagttaaac atagatgtag ctgatgtgga 120
gagcttgcg gtgcagtgc tattggataa cactattcat ggccgaattg atcaagtcaa 180
craartcctt gaactggatc atcagaagaa gggtgggtgca cgatatactg cactagataa 240
tggaccaacc aactaaattc tctcaccagg ctgcatcagt aaactggctt aacagaaaac 300
a 301

```

<210> 271
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (301)
 <223> n = A,T,C or G

<400> 271

```

aaaagggtct ctaagatca acaattttaa taatatttg atagaacatt ctttctcatc 60
tttatagctc atctttaggg ttgatattca gttcatgctt cctttgctgt tcttgatcca 120
gaattgcaat cacttcatca gctgtatbc gotccaatto tctataaagt ggggtccaagg 180
tgaaccacag agccacagca cactcttctt ccttggtgac tgccttcacc ccatgagngt 240
tctctcctcc agatganaac tgatcatgca cccacatttt ggggtttata gaagcagtcg 300
c 301

```

<210> 272

<211> 301

<212> DNA

<213> Homo sapien

<400> 272

```

taattgctc agccacagat aacaccaatc aaatggaaca atcactgtc ttcaantgtc 60
ttatcagaa accaatgag cctggaaatc tcataatcc taaacatgct gtatttagga 120
tcaataatt cctcatgat agcraagaaa aattctttgc gcacccctcc tgcattcaca 180
gcctcttctc caacaaatc aaccttgagt ggcttctctg aatccatgtt ctttgttttc 240
ctaaggactt ccatgcatc tctaraata tttctctac gcacccactag aatlaagcag 300
g 301

```

<210> 273

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 273

```

acatgtgtgt atgtgtatct ttgggaaan aanaagacat ctgttttctt attttttttg 60
agagangctg ggacatggat aatcacwtaa ttgtctayta tyactttaat ctgactygaa 120
gaaccgtcta aaataaaaat ttaccatgtc dtatatttct tatagtatgc ttatttcacc 180
tcttctctgt ccagagagag tatcagtgc ananatttma gggcgaamac atymattggg 240
gggactctty ttacngagm aucttgccc aggcctctcg makengantt ccgcanaac 300
t 301

```

<210> 274

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or O

<400> 274

```

cttatatact ctttctcaga ggcaaaagag gagatgggtc atgtagacaa tcttttgagg 60
aacagtaaat gattattaga gagaangaat ggaccaagga gacagaaatt aacttgtaaa 120
tgattctctc tggaaatctga atgagatcaa gaggccagct ttagcttctg gaaaagtcca 180
tctaggtatg gttgcattct cgtcttcttt tctgcagtag ataattgaggt aacogaaggc 240
aattgtgctt cttttgataa gaagttttct tggatcatatc aggaatttcc aganaaagtc 300

```

C

301

<210> 275
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{301}
<223> n = A,T,C or G

<400> 275
tcgggtgtcag cagcacgtgg cattgaacat tgcgaatgtgg agcccaaac ccagaaaatg 60
gggtgaaatt ggcacaacttt ctatcaactt atgttggcua ttttggcacc aacagtaagc 120
tggcccttct aataaaagaa aattgaaagg tttctacta aacgggatta agtagtggag 180
tcaagagact cccagggctc agcgtacctg cccgggaggc cgtcgaagg cgaattctgc 240
agatctccat cacactggcg gncgctcgan catgcactta gaaggnccaa ttccgacctat 300
a 301

<210> 276
<211> 301
<212> DNA
<213> Homo sapien

<400> 276
cgtacacata ctccactaaat aaatgacctc attgtggtat tattactata ctgattacat 60
ttatcatgtg acttctaatt agaaatgta tccaaagca aacagcaga tatacaaat 120
taaggggaca gaagatagac actaacagat aaggcaactt Atacattgag aatccaaatc 180
caatacatit aacatttgg gaaatgaggg ggacaaatgg aagccagatc aaatttgtgt 240
aaaactatit agtaagtitt ccttgcttca tgtctgagaa ggtctctctt caatggggat 300
g 301

<210> 277
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{301}
<223> n = A,T,C or G

<400> 277
tttgttgatg tcagkatitc attacttgcg ttatgagtgc taccctggga aattctaaag 60
atacagagga cttggaggaa gcagagcaac tgaatttaat taaaagagag gaaaacattg 120
gaatcatggc actcctgata ctttcccaa tcaaacctct caatgcccca cctcgtct 180
caccatagtg gggagactaa agtggccacg gatttgcctt Angtgtgcag tgcgttctga 240
gttctctgtc gattacatct gaccagttct ctttttccga agtctntccg tccaatcttg 300
c 301

<210> 278
<211> 301
<212> DNA
<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 278

taccactaca ctcagcctg ggcacacagag caagacctgt ctcaaacgcat aaaatggaat	60
aacatataaa atgaaacagg gaaaatgaag ctgacanttt atggaagcca gggcttgtca	120
cagtctctac tgttattatg cattaacctgg gaatttatat aagcccttaa tcaataatgcc	180
aatgaacatc tcatgtgtgc tcacaatggt ctggcactat tataagtgtc tcaacagggtt	240
tatgtgtctc tcgttaacttt atggantagg tctcgyccg cgaacacgct aagccgaatt	300
c	301

<210> 279
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 279

aaagcaggga tgacaaagct tgcttttctg gtatgttcta ggtgtattgt gacttttact	60
gttatattca ttgccaatat aagtaaacat agattatata tgtahagtgt ttcaaaaagc	120
ctagaccttt accttccagc caccocacag tgcttgatar ttcagagtea gtcattgggt	180
atacatgtgt agttccaaag cacataagct agaanaanaa atatttctag ggagcactac	240
catctgtttt cacatgaat gccacacaca tagaactcca acatcaatt cattgcacag	300
a	301

<210> 280
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 280

ggtactggag ttttccctcc ctgtgaaaac gtaactactg ttgggagctga attgaggatg	60
tagaaagggt gtggaaccaa attgtggtca atggaatag gagaatatgg ttctcactct	120
tgaganaaaa acctaaagatt agcccaggta gtgacctga acttcagttt ttctgcctgg	180
gtttgatata gtctaggggt ggggttagat taagatctaa attacatcag gacaaagaga	240
cagactatta actccacagt taattaaagg ggtatgttcc atgtttattt gttaaagcag	300
t	301

<210> 281
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 281

aggttcaaga aggggaatgg gaaagagctg ctgctgtggc attgttcaac ttggatatcc	60
gccgagcaat ccaaatcctg aatgaagggg catcttctga aaaaggagat ctgaatctca	120
atgtggtagc aatggcttta tggggttata cggatgagaa gaacttccct tggagagaaa	180
tgtgtagcac actgcatta cagctaaata adccgtattt gtgtgtcatg ttgtcatttc	240

tgacaaagtga aacaggatct tacgatggag ttttgtatga aaacaaagtt gcagtacctc 300
g 301

<210> 282
<211> 301
<212> DNA
<213> Homo sapien

<400> 282
caggtaactac agauttaaaa tactgacaag caagtagttt ctggcggtgc acgaattgca 60
tcacgaarcc aaaaatttaag aatttcaaaa agacattttg tgggcacctg ctacacacaga 120
agcgacagaag caaagcccaag gcagaaccat gctaacccta cagctcager tgcacagaag 180
cgacagaagca aagcccaagc agaaccatgc taaccttaca gctcagcctg cacagaagcg 240
cagaagcaca gcccaaggcag aacatgctaa ccttacagct caagcctgac agaaagcagag 300
a 301

<210> 283
<211> 301
<212> DNA
<213> Homo sapien

<400> 283
atctgtatcc ggacagacaaa ctttatarag tgttagagag tgagcgaaag gatgcaaaag 60
cacttggagg gctttataat aatctgctgc ttgaaaaaaa aaatgtgtag ttgatactca 120
gtgcatctcc agacatagta aggggttgc ctgaccatc aggtgatcat tttttctatc 180
acttcccaag ttttatgcaa aaattctgtt aaattctata atggtgatat gcatcttcta 240
ggaaacatat acatttttca aaatctattt tatgttagaa ctgacagacg aatttgcctt 300
g 301

<210> 284
<211> 301
<212> DNA
<213> Homo sapien

<400> 284
caggtacaaa acgctattaa gtggcctaga atttgaacat ttgtggctct catctacttt 60
gcttctgtgt tgggcaaaag acatcttcc ctaaaatat attaccaaga aaagcaagaa 120
gcagatttag tttttgacaa aacaaaacag ccaaaagggg gctgacctgg agcagagcat 180
ggtgagaggc aaggtcatgag agggcaagtt tgcctgtggac agatcgtgct ctactttatc 240
actgggttaa aagaaaacaa agttcattga tgtcgaaggga tatatacagt gttcagaatt 300
a 301

<210> 285
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> 11... (301)
<223> n = A,T,C or G

<400> 285
acatcacat gatcggatcc cccacccatt atacgttgha tytttacata aatctcttc 60
aatgacatc agtgttttaa aaaaaatacc gaaaaatcct tctgcaccc aatctctaac 120

CAGGAAAGCA AATGCTATTT ACAGACCTGC AAGCCCTCCC TCAACGAAA CTATTTCTGG 180
 ATTAATATG TCTGACTTCT TTTGAGGTCA CACGACTAGG CAATGCTAT TTACGATCTG 240
 CAAAAGCTGT TTGAAGAGTC AAGGCCCCA TGTGAACAG ATTTCTGGAC CCTGTAAACG 300
 T 301

<210> 286

<211> 301

<212> DNA

<213> Homo sapien

<400> 286

TACCAGTGA TTCCAGCTG GGTGACAGG TGAGACTCCY TCTCCAAAA AACTTTGCT 60
 TGTATATTAT TTTTGCCTA CAGTGGATCA TTCTAGTAGG AAGGACAGT AAGATTTT 120
 ATCAAAATGT GTCATGCCAG TAAGAGATGT TATATCTT TCTCATTTCT TCCCACCCA 180
 AAAATAAGCT ACCATATAAG TTATAAGTCT CAAATTTTGG CCTTTACTA AAGTGTGAT 240
 GTTCTGTTC ATTGTGTATG CTTCATCACC TATATTAGG AATTCCTT TTTCCCTG 300
 T 301

<210> 287

<211> 301

<212> DNA

<213> Homo sapien

<400> 287

TACAGATCTG GGAACAAAT ATTAAAAATG AGTGTGGCTG GATATATGGA GAACGTTGGG 60
 CCCAGAAGGA ACGTAGAGAT CAGATATTAC AACAGCTTLY TTTTGAGGGT TAGAATATG 120
 AAGTGAATTT GTTATGAACG CACAGTTAG GCAACAGGGC CAGAATCTG ACCCTCTGC 180
 CCGTGGTAT CTCTCCCCA GTTTGGCTGC CTCATGTTAC CACAGTATTC CATTCTGTT 240
 GTTGCATGTC TTGTGAAGCC ATCAAGATTT TCTCTCTGT CTCTCTCTA TTGGTAATGC 300
 T 301

<210> 288

<211> 301

<212> DNA

<213> Homo sapien

<400> 288

GTACACCTAA CTGCAAGGAC AGCTGAGGAA TGTATCGGGC AGCCGCTTTT AAGAAGTAG 60
 AGTCAATAGG AAGACAAATT CCAGTTCACG CTCAGTCTGG GTATCTGCAA AGCTGCAAAA 120
 GATCTTTAAA GACAATTTCA AGAGATATT TCTTAAAGT TGGCAATTTG GAGATCATAC 180
 AAAAGCATCT GCTTTTGTGA TTAAATTTAG CTCATCTGGC CACTGGAAGA ATCCAAACAG 240
 TCTGCCTTAA TTTTGGATGA ATGCATGATG GAAATTCAT AATTTAGAAA GTTAAAAAAA 300
 A 301

<210> 289

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A, T, C or G

<400> 289

```

ggtaactgtg ttccatgta tgtttctaca cattgctacc tcagtgtccc tggaaactta      60
gtttttgatg tctccagta gteracobb abttaactct ttgaaactgt atcatctttg      120
craagtaaga gtggtggcct atttcagctg ctttgacaaa atgactggct cctgacttao      180
cgttctataa atgaatgtgc tgaagcaaa tgcccatggg ggccggcgaan aagggaaaga      240
tgbgttttct tttggactct ctgtggtccc ttccaatgct gtgggtttcc aaccagngga      300
a                                          301

```

```

<210> 290
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}...{301}
<223> n = A,T,C or G

```

```

<400> 290
acactgagct cttcttgata aatataraga atgcttggca tatacaagat tctatactac      60
tgactgatct gtcttttct ctccagctc ttaccccaaa aagcttttcc accttaagtg      120
ttctgacctc cttttctaac cacagtaggg atagaggcag anccacctac aatgaacatg      180
gagttctatc aagaggcaga aacagcacag aatcccagtc ttaccattcg ctagractgc      240
tgccttgaaac aaaaacattt ctccatgtct catcttcttc atgcttcaag taacagttag      300
a                                          301

```

```

<210> 291
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 291
caggtacca cttcttctat cctagaaacn tttcatttca tgttgttgaa acataacaac      60
tatatcagct agatttttct tctatgttt anctgctatg gaaaacttga cacattctgc      120
tttactcttt tgtttatagg tgaatcacaa aatgtatttc tatgtattct gtagtccaat      180
agccatggct gtttacttca ttttaattat ttagcataaa gacattatga aaaggcctaa      240
acatgagctt cacttcccca ctacccatatt agcatctgtt atttcttaac cgtaatgcct      300
a                                          301

```

```

<210> 292
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}...{301}
<223> n = A,T,C or G

```

```

<400> 292
accttttagt agtaatgtct aataataaac aagaaatcaa ttttataagg tccatatagc      60
tgtattaat aactttcagg tttaaaagat aaaaatccat catttcaat gtgggtatcc      120
aaaaccanaa natataaccg aaaggaaaana cagatgagac ataaaatgat ttgcnagatg      180
ggaaatatag tascctyatg atgttnatta aattccagtt ataatagtgg ctacacactc      240
tcactacaca cacagacccc acagtcctat atgcccacaa cacattccca taacttgaaa      300
a                                          301

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<210> 293
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 293
 ggtaccaagt gctygtgcca gcctgttacc tgtttctcact gaaaagtctg gctaattgctc 60
 ttgtgtagtc acttcttgatt ctgacaaatca atcaatcaat ggcctagagc actgactgtt 120
 aacacaaacg tcaactagcaa agtagcaaca gctttaagtc taantacaa gctgttctgt 180
 gtgagaattt tttaaaaggc tacttgata ataacccttg tcatctttta tgcactcgg 240
 ccgcgaccac gctaagccga attctgcaga tateratcac actggcggcc gctcggcat 300
 g 301

<210> 294
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (301)
 <223> n = A, T, C or G

<400> 294
 tgaccataaa caatatacac bagctatctt tttactgtc catcattagc accaatgaag 60
 attcaataaa attaccttta ttcagacatc tcaaaacat tctgcaaat cttagtgaag 120
 tttactata gtcacaganc ttaattatc acattgttt ctatgtctac tgaataaag 180
 ttcactactt ttctgggata ttcttaca aaacttatta aaatcctgg tattatcacc 240
 occaattata cagtagcaca accaccttat gtatgtttta catgatagct ctgtagaggt 300
 t 301

<210> 295
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 295
 gtactctttc tctccctcc tctgaattta attctttcaa ctctgaattt gcaaggatta 60
 cacatttcac tgtgtgtat attgtgtgc aaaaaaaa gtgtctttgt ttaaaattac 120
 ttggtttgt aatccatctt gcttttccc cattggaact agtcattaac ccattctctga 180
 actggtagaa aaactctga agagctagtc tctcagcatc tgacagggtg attggatggg 240
 tctcagaacc atttcaccca gacagcctgt tctatcctc ttaataaat tagtttgggt 300
 tctct 305

<210> 296
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 296
 aggtactatg ggaagctgct aaataaatat ttgatagtaa aagtatgtaa tgtgctatct 60
 caactagtag taacttaaaa ataaactgaa actctatgga acttgaagtt atttccctg 120
 attaaataga attaataaac caatatgagg aaacatgaaa ccattgcaatc tactatcaac 180
 tttagaaaag tgattgaacg aaccacttag ctttcagatg atgaacactg ataagtcatt 240

tgtcatttct ataaatttta aaattctgtta ataatgatggc ctacaggagag gaaaaagggg 300
c 301

<210> 297
<211> 300
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(300)
<223> n = A,T,C or G

<400> 297
actgagtttt aactggacgc caagcaggca aggtcggag gtlttgctct ctttggtcta 60
aagggttttg aaaccttgaa ggagaatcat ttggacaaga agtactaag agtctagaga 120
acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt 180
tccatcattg ggagtgcact ggcoactccct caaaatttgt ctgggctggc ctgaagtgtc 240
accgcacctc ggccgcgacc acgctaagcc gaattctgca gatattccatc acactggcgg 300

<210> 298
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 298
tatggggttt gtcacccaaa agctgatgct gagaaaggcc tccctggggc ccttcccgcg 60
ggcatctggg agacctggg tccagctgtt tctggaaatg ggtccuagtg ccgcccggctg 120
tgaagctctc agatcaatca cgggaagggc ctggcggttg tggccacctg gaaccacctt 180
gtcctgtctg ttacacattc actaycaggt ctctcttgg cattacnatr tgttccccca 240
caacagtgac ctgtgcattc tgcgttggcc tgcctgtgct gcaggtgget ctcagcgagg 300
t 301

<210> 299
<211> 301
<212> DNA
<213> Homo sapien

<400> 299
gttttgagac ggagttttcac tcttggtgac cagactggac tgcattggca gggctctctgc 60
tcactgcacc ctctgcctcc caggttcagag caattctcct gcctcagcct cccaggtagc 120
tgggatttga ggctcacgac accataccra gctaattttt ttgtattttt agtagagacg 180
gagtttcgcc atgtcggcca gctggcttca aartcctgac ctcaagcgac ctgcctgcct 240
cggctccca aagtgtctga attataggca tgagtcaaca cggccagcct aaagatatct 300
c 301

<210> 300
<211> 301
<212> DNA
<213> Homo sapien

<400> 300

attcagttttt	atttgcctgac	ccagtatctg	taaccaggag	tgcacaaaa	tcttgcctga	60
tatgtccac	accactggg	aaaggctccc	acctggctac	ttctctatc	agctgggtca	120
gttgcatccc	acaaggttct	cagcctaattg	agtttacta	cctgacagtc	tcaaaactta	180
gtaaagcaag	accatgacat	tcccccatgg	aaatcagagt	ttgccccacc	gtcttgttac	240
tataaagcct	gertctaaca	gtccttgctt	cttcacacca	atcccgagcg	catcccccat	300
s						301

<210> 301

<211> 301

<212> DNA

<213> Homo sapien

<400> 301

ttaatttttt	gagaggataa	aaaggacaaa	taattctagaa	atgtgtcttc	ttcagtcctgc	60
agaggacccc	aggtctccan	gcaaccacat	ggtcaaggyc	atgaataatt	aaaagtgggt	120
gggaactcac	aaagacccctc	agagctgaga	cacccacaaac	agtgggagct	cacaaagacc	180
ctcagagctg	agacacccac	aacagtggga	gttcacaaag	accttcagag	ctgagacacc	240
cacaacagca	ctcgtttcag	ctgcccacatg	tgtgaataag	gatgczaatgt	ccagaagtgt	300
t						301

<210> 302

<211> 301

<212> DNA

<213> Homo sapien

<400> 302

aggtaacacat	ttagcctgtg	gtaaatgact	cacuaaactg	attttaaaat	caagttaatg	60
tgaatttttg	aaattactac	ttaattccta	ttcacactaa	caatggcatt	aagggttgac	120
ttgagttggg	tcttagctatt	atttatggta	aataggctct	taccacttgc	aataactgg	180
ccacatcatt	aatgactgac	ttcccagtta	ggctctctaa	ggggttaagta	gggggatcca	240
caggatttga	gatgctaagg	ccccagagat	ogtttgatcc	aacctcttta	ttttcagagg	300
s						301

<210> 303

<211> 301

<212> DNA

<213> Homo sapien

<400> 303

aggtaaccaac	tgtggaaata	ggtagaggat	cattttttct	ttccatatac	actaagttgt	60
atatctgtct	ttgacagttt	aacacatctt	cttctgtcag	agattctttc	acaatagcac	120
tggctaattgg	aactacrgct	tgcattgtta	aaatggctgt	ttgtgaaatg	atcataggcc	180
agtaacgggt	atgttttctt	aactgatctt	ttgtctgttc	caaagggacc	tcaagacttc	240
catcgatttt	atatctgggg	tctagaaaag	gagttaatct	gttttccctc	ataaattcac	300
c						301

<210> 304

<211> 301

<212> DNA

<213> Homo sapien

<400> 304

acatggatgt	tattttgcag	actgtcacc	tgaatttgta	tttgcttgac	atlgcctaot	60
------------	------------	-----------	------------	------------	------------	----

```

tattagcttc agtttcagct taccraccttt ttgtctgcaa catgcaraaa agacagtgcc      120
cttttttagtg tatcatatca ggaatcatct caatattggct tgtgccatta ctggtgcagt      180
gactttcagc cacttgggtg aggtggagtc ggcacatagt ctccactgca aattactga      240
tttccctttt gtaattaata agtgtgtgtg tgaagattct ttgagatgag gtatatatct      300
c                                                                                   301

```

<210> 305

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n - A,T,C or G

<400> 305

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gungtacagc gtgggtcaagg taacaagaag aaaaaaagtgt gagtggcacc ctgggatgag      60
caggggggaca gacgtggaca gacacgttgt catttgctgc tgtgggtagg azaatgggag      120
tzaaggaggga gaaacagata cnaaatctcc aactcagtat taaggatatt tcatgacctag      180
aatattggtg gaacacagaa tacattcata tggcaataaa ctaaccratgg tggaaacaaa      240
ttctgggatt taagttggat accaangaaa ttgtattaaa agagctgttc atggaataag      300
a                                                                                   301

```

<210> 306

<211> 8

<212> PRT

<213> Homo sapien

<400> 306

Val Leu Gly Trp Val Ala Glu Leu

1

5

<210> 307

<211> 637

<212> DNA

<213> Homo sapien

<400> 307

```

acaggggatg aagggaaaagg gagaggatga ggaagcctcc ctggggattt ggtttgggtcc      60
ttgtgatcag gtgggtctatg ggggttatcc ctacaaagaa gaatccagaa atagggggcac      120
attgaggaat gatacttgag cccaaagagc attcaatcat tgttttattt gccttmtttt      180
cacaccattg gtgagggagg gattaccacc ctggggttat gaagatggtt gaacacccca      240
cacatagcac cggagatatg agatcaacag ttcttttagc atagagattc acagccacaga      300
gcaggaggag gcttgcaaac catgcaggat gacatggggg atgagctcgg gattgggtgtg      360
aagaagcaag gactgttaga ggcaggcttt atagtaacaa gacgggtggg caaactctga      420
tttccgtggg ggaatgtcat ggtcttgctt tactaagttt tgagactggc aggtagtga      480
actcattagg ctgagaacct tgtggaatgc acttgaccac actgatagag gaagttagca      540
gggtgggagcc ttccccagtg ggtgtgggac atatctggca agattttgtg gcaactcctg      600
ttacagatac tggggcagca aataaaactg aactcttg                                     637

```

<210> 308

<211> 647

<212> DNA

<213> Homo sapien

<220>
 <221> Misc_feature
 <222> {1}...(647)
 <223> n = A,T,C or G

<400> 308

acgattttca	ttatcctgta	aatcgggtca	ctcaaggggc	caaccacagc	tgggagccac	60
tgtcagggg	agggttcata	tgggactttc	tactgcccac	ggttctatac	aggatataaa	120
ggngcctcac	agtatagatc	tggtagcaca	gaagaagaaa	caaacactga	tctctttctg	180
craacctctt	gaccttttgg	aactcctctg	accttttaga	acagacctac	ctaataatctg	240
ctagagaaaa	gaccacacaa	ggcctcaaa	gatctcttac	catgaagggtc	tcaactaatt	300
cttgggttaa	atgtgggttc	caacttaggt	tctgaatatg	gggggaagg	tcaatttgc	360
catttttgt	gtggatata	tcaggatggt	caggggcuag	agcaggggtc	tgttgtctt	420
gggaacacac	gctgagcata	taacataggt	ttatggggag	cacacacaca	tcaaatgcac	480
tgtatcaatt	gncatgaa	cttgagggtc	ctgaatctac	cgattcatct	taaggcagca	540
ggacragttt	gagtggcaac	aatgcagcag	cagaaatcaat	ggaaacacaa	gcatgattgc	600
aatgtccttt	ttttctctct	gcttctgact	tgataaaagg	ggacctgt		647

<210> 309
 <211> 460
 <212> DNA
 <213> Homo sapien

<400> 309

actttatagt	ttaggttgg	cattggaaa	aaaaaaagc	cagaacacaa	tgtgatagat	60
aatatgatcg	gctgcacact	tccagactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gggcacatct	tcagcaagag	ggggaaatac	tcactatttt	tggccagcag	ttgtttgatc	180
accaaacatc	atgccagaat	actcagcaaa	ccttctctagc	tcttgagaag	tcaaatgccg	240
gggggaattt	ttcctggcna	ttttaatttg	actccttatg	tgagagcagc	ggctacccag	300
ctgggggtgt	ggagcgaacc	cgtcactagt	ggacatgcag	tggcagagct	cctggtaacc	360
acctagagga	atacacaggc	acatgtgtga	tgccaagcgt	gacacctga	gcactcaaat	420
ctgtcttgtt	tttgtctttc	ggtgtgtaag	attctcaagt			460

<210> 310
 <211> 539
 <212> DNA
 <213> Homo sapien

<400> 310

acgggaattt	tcaaatata	atagggaagg	aagaaactc	aaatattata	ggcaggaattg	60
ctaaagggtt	tcaaatatgt	caggatttgg	agaaggcatg	gataaagaac	aaagtctagt	120
tagggaagag	aaacacagaa	ggaagagaca	caataaaggt	cattatgtat	tctgtgagaa	180
gtcagacagt	aagatttgtg	ggaaatgggt	tgggttgttg	tatggtatgt	attttagcaa	240
taatctttat	ggcagagaaa	gctaaaatcc	tttagcttgc	gtgaatgatc	acttgcctga	300
ttcctcaagg	taggcattgt	gaaggaggg	ttagaaggga	caagagacaa	atgaactgac	360
ctagatagaa	agccttagta	tactcagcta	ggaatagtga	ttctgagggc	acactgtgac	420
atgattatgt	cattacatgt	atggtagtga	tggggatgat	aggaagggaag	aacttatggc	480
atatctttcac	ccccacaaaa	gtcagttaaa	catttgggaca	ctaaccatcc	aggtonaga	539

<210> 311
 <211> 526
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(526)

<223> n = A,T,C or G

<400> 311

caaatttggag ccaatgacat agaattttac aaatcaagaa gcttattctg gggccatttc	60
ttttgacgtt ttctctaaac tactaaagag gcatctaatga tccataaatt atattatcta	120
catttacagc atttataatg tgttcagcat gaaatattag ctacagggga agctaaataa	180
attaaacatg gaataaagat ttgtccctaa atataatcta caagaagact tccgatatttg	240
tttttcacaa gtgaagcatt ctatataagt gtcataacct ttttggggaa acatagggaa	300
aaaatggggg aactctgaag ggtttttaagt atcttacctg aagctacaga ctccataacc	360
tctctttaca gggagctcct ggggccccta cagaatagag tggctgagat tcttgattgc	420
acagcaagag ctctctacct aaaccccttc cctttttagt atctgtgcat caagtataaa	480
agttctataa acgttagtnt acttatttta atccccaaag cacagt	526

<210> 312

<211> 500

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(500)

<223> n = A,T,C or G

<400> 312

ctctctcttc cccacccctt gactctagag aactggggtt ttcccragta ctccagcnaa	60
tcatttctga aagcagttga gccactttat tccaaagtac actgcagatg ctcaaaactct	120
ccatttcttc ttcccttcca cctgccagtt ttgctgactc tcaacttgtc atgagtgtaa	180
gcattaaagg cattatgctt ctctcgattct gaagacaggc cctgctcatg gatgactctg	240
gcttcttagg aaaaataattt ctctccaaaa ttagtaggaa ctctaaactt atccctcttt	300
tgcagatgtc tagcagcttc agacatttgg ttangaaccc atgggaazaa aaaaaatcct	360
tgtcaatgag gtctcctttg taaaccanga ttcttatttg nctggatag aatatcagct	420
ctgaatgtgt ggtaaaagatt ctctgtgttg antataggag aaatcagttt gctgaaaagt	480
tagtcttaaa tacttatcgg	500

<210> 313

<211> 718

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(718)

<223> n = A,T,C or G

<400> 313

ggagatttgt gtggtttcca gccgagggag accaggaaga tctgcatggt gggaaaggacc	60
tgatgataca gaggtagaaa ataagaaagg ctgctgactt tactatctga ggccacacat	120
ctgctgaact ggagataatt aacatcacta gaaacagcaa gatgacata taatgtctaa	180
gtagtgaact gtttttgcac atttccayer cttttaaata tccacacaca caggaaagcac	240
aaaagggaag ccagagatcc ctgggagaaa tggcgggocg ccatcttggg tcatcgatga	300
gcctcgccct gtgcctgntc ccgcttctga gggaaaggaa ttagaaaatg aattgatgtg	360
ttccttaaaag gatggcagga aaacagatcc tgttctggat attcatttga aonggatcac	420

agattttgaaa tgaagtcaca aagtgagrat taccactgag aggaaaacag acgagaaaat	480
cttgatgggt cacaagacac gcaacaaaca aatgggata ctgtgatgac acgagcagcc	540
aatggggag gagataccac ggggcagagg tcaggtttct ggccttgctg cctaaactgtg	600
cgttatacca atcatcttca ttcttacctt caaacaagct gtngaataac tgacttacgg	660
ttcttntggc ccaattttc atnateccac cctctctttt aannttantc caaantgt	718

<210> 314

<211> 358

<212> DNA

<213> Homo sapien

<400> 314

gtttattttac attacagaaa aaacatcagc acaatgtata ctatttcana tatatccata	60
cataatcana tatagctgta gtacatgttt tcaatgggtg agattaccac aatggcagg	120
caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg tctagtcaca	180
gctctcggtg gtccagccac tgtgaacacat gctcccttta gattaaacctc gtggatgctc	240
ttgttgtatt gctgaactgt agtgccctgt attttgcttc tgtctgtgaa ttctgttct	300
tctggggcat tctctgtga tgcagaggac caccacacag atgacagcaa tctgaatt	358

<210> 315

<211> 341

<212> DNA

<213> Homo sapien

<400> 315

taccacctcc ccgtgggac tgatgagccg catcaccatg gtcaccagca ccatgaaggc	60
atagggtgat atgaggacat ggaatgggac cccaaggatg gctgtccaa agagcgagt	120
gaccccatc ctgaagatgt ctggaacctc taccagcagg atgatgatag cccaatgac	180
agtcaccagc tccccagca gccggataac gtccttaggg gtcctgtagg ctctctgaag	240
tagcttctgc tgtaagaggg tgtgtctccg ggggctcgtg cggctattgg tctgggctt	300
gagggggcgg tagatgcagc acatggctga gcatgatgat c	341

<210> 316

<211> 151

<212> DNA

<213> Homo sapien

<400> 316

agactgggca agactcttac gccccacact graatctggc ctgtgtgccc tatccattta	60
tgtgggcttt tctcgagttt ctgattataa acauccatgg agcgatgtgt tgactggact	120
cattcagggg gctctggttg caatattagt c	151

<210> 317

<211> 151

<212> DNA

<213> Homo sapien

<400> 317

agaactagtg gatcctaag aaataacctga aacatatatt ggcatttacc aatggctcaa	60
atcttcattt atctctggcc ttaaccttgg ctctctgggc tgcggccagg agatcccagg	120
ccagggctct gttcttgcca caactgttg a	151

<210> 318

<211> 151

<212> DNA

<213> Homo sapien

<400> 318

```
actggtggga ggcgctgtt agttggctgt ttccagggg gtctttcggg gggacctctt    60
gtgcagact ggagtgctt tattcttggc gggagaccgc acattccact gctgaggctg    120
tgggggcggg ttatcaggca gtgataaaca t                                151
```

<210> 319

<211> 151

<212> DNA

<213> Homo sapien

<400> 319

```
aactagtggg tccagagcta taggtacagt gtgatctcag ctttgcgaac acattcttcta    60
catagatagt accaggtatt aatagatatg taagagaaga aatcacacca ttaataatgg    120
taagattggg ttatgtgat tttagtggg a                                151
```

<210> 320

<211> 150

<212> DNA

<213> Homo sapien

<400> 320

```
aactagtggg tccactagtc cagtgttggt gaattccatt gtgttggggg tctagatcgc    60
gagcggctgc ccttttttt tttttttttg ggggggaatt ttttttttt aatagttatt    120
gagtgttcta cagcttacag taaataccat                                150
```

<210> 321

<211> 151

<212> DNA

<213> Homo sapien

<400> 321

```
agcaactctt tttttcatcc aggtattttt aggccttagga ttttctctca cartgcagtt    60
taggggtggc ttgtaaccag ctatggcata ggtgttaacc aaaggctgag taacatggg    120
tgctcttgag aaatcaagt cttcatcac t                                151
```

<210> 322

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (151)

<223> n = A, T, C or G

<400> 322

```
atcagcacc tttcctgtt tcttgccctt cttttttttt ttcttasatt ctgcttgagg    60
tttgggcttg gtcaatttgc cacagggttc ggagatggtg acagtcttcc ggcattcggc    120
attgtgcagg gtctgcttca nacttccagt t                                151
```

<210> 323

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(251)

<223> n = A,T,C or G

<400> 323

tgaggacttg	tkttcttttt	ctttattttt	aatcctctta	ckttgtaaat	atattgccta	60
nagactcant	tactaccag	tttgtggtt	twtgggagaa	atgtactgg	acagttagct	120
gttcaatya	aaagacatt	anccatgtg	g			151

<210> 324

<211> 461

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(461)

<223> n = A,T,C or G

<400> 324

acctgtgtgg	aatttcagct	ttctcatgc	aaaaggattt	tgtatccccg	gcctacttga	60
agaagtgtc	agctaaggaa	atccagggtt	ttggttggac	tgttaataac	tttgatgaaa	120
agagttacta	cpaatcccat	cttggttcca	gtatatcau	tgacagcatg	gtagagagct	180
gcgaacctoa	cttctagaut	ttcacggttg	gacgaaccgg	gttcagaaac	tgccaggggc	240
ctcatcacagg	gatatcaaaa	taccttttgt	gttaccacag	ccctggggaa	tcagggtgact	300
cacacaaatg	caatagtttg	tcaatgcatt	tttacctgaa	ccaaagctaa	acccgggttt	360
gcacccatgc	acctgtggat	gccagagttc	aaactgtgtg	ctcttgaaaa	tcgggtctga	420
aaabacgcac	aagagccct	gacctgacct	agctgangra	c		461

<210> 325

<211> 400

<212> DNA

<213> Homo sapien

<400> 325

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agtaagagtg	gtggcctatt	tangctgctt	tgacaaaatg	actggctcct	gacttaacgt	180
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gttttgtttt	ggactctctg	tggtrccctt	caatgctgtg	ggtttccaac	cagggggaagg	300
gtcccttttg	cattgccaaag	tgcataaacc	atgagcarta	cgctaccatg	gttctgcctc	360
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<210> 326

<211> 1215

<212> DNA

<213> Homo sapien

<400> 326

ggaggactgc	agccgcact	cgcagccctg	gcaggcggca	ctggctcatgg	aaaacgaatt	60
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gaactcttac	accatcgggc	tgggcttgca	cagttcttgag	gccgaccaaag	agccaggggag	180

ccaghtggtg	gaggccager	tctccgtarg	gcaccagag	tacaacagac	ccttgcctgc	240
taacgacctc	atgctcatca	agttggacga	atccgtgtor	gagtctgaca	ccatccggag	300
catcagcatt	gcttcgcagt	gcccatacgc	ggggaaactct	tgcttcgltt	ctggctgggg	360
tctgctggcg	aacggcagaa	tgccataccgt	gctgcagtgc	gtgaacgtgt	cgggtggtgtc	420
tgaggaggtc	tgacgttaagr	tctatgaccc	gctgtaccac	cccagcctgt	tctgcgcccg	480
cggagggcaa	gaccagaagg	actcctgcga	cggtgactct	ggggggcccc	tgatctgcga	540
cgggtacttg	cagggccttg	tgtctttcgg	aaaagccccg	tgtggccaa	ttggcgtgcc	600
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aaaaaaaaaa	aaaaa					1215

<210> 327

<211> 220

<212> PRT

<213> Homo sapien

<400> 327

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Glu	Asn	Glu	Leu	Phe	Cys	Ser	Gly	Val	Leu	Val	His	Pro	Gln	Trp	Val
			20					25					30		
Leu	Ser	Ala	Ala	His	Cys	Phe	Gln	Asn	Ser	Tyr	Thr	Ile	Gly	Leu	Gly
		35					40					45			
Leu	His	Ser	Leu	Glu	Ala	Asp	Gln	Glu	Pro	Gly	Ser	Gln	Met	Val	Glu
		50				55					60				
Ala	Ser	Leu	Ser	Val	Arg	His	Pro	Glu	Tyr	Asn	Arg	Pro	Leu	Leu	Ala
65					70					75				80	
Asn	Asp	Leu	Met	Leu	Ile	Lys	Leu	Asp	Glu	Ser	Val	Ser	Glu	Ser	Asp
			85						90					95	
Thr	Ile	Arg	Ser	Ile	Ser	Ile	Ala	Ser	Gln	Cys	Pro	Thr	Ala	Gly	Asn
			100					105					110		
Ser	Cys	Leu	Val	Ser	Gly	Trp	Gly	Leu	Leu	Ala	Asn	Gly	Arg	Met	Pro
		115					120					125			
Thr	Val	Leu	Gln	Cys	Val	Asn	Val	Ser	Val	Val	Ser	Glu	Glu	Val	Cys
		130				135					140				
Ser	Lys	Leu	Tyr	Asp	Pro	Leu	Tyr	His	Pro	Ser	Met	Phe	Cys	Ala	Gly
145				150						155				160	
Gly	Gly	Gln	Asp	Gln	Lys	Asp	Ser	Cys	Asn	Gly	Asp	Ser	Gly	Gly	Pro
			165						170					175	
Leu	Ile	Cys	Asn	Gly	Tyr	Leu	Gln	Gly	Leu	Val	Ser	Phe	Gly	Lys	Ala
		180					185					190			
Pro	Cys	Gly	Gln	Val	Gly	Val	Pro	Gly	Val	Tyr	Thr	Asn	Leu	Cys	Lys
		195					200					205			
Phe	Thr	Glu	Trp	Ile	Glu	Lys	Thr	Val	Gln	Ala	Ser				
		210				215					220				

<210> 328

<211> 234
 <212> DNA
 <213> Homo sapien

<400> 328

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atcgcagtg ggtgctgtca gccacacact gtttcagaa ctctacacc atcgggctgg      180
gcctgcacag tcttgaggcc gaccaagagc caggagacca gatggtggag gcc      234
  
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<210> 329
 <211> 77
 <212> PRT
 <213> Homo sapien

<400> 329

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Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly Glu Asp Cys Ser
 1             5             10             15
Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met Glu Asn Glu Leu
      20             25             30
Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val Leu Ser Ala Thr
      35             40             45
His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly Leu His Ser Leu
      50             55             60
Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu Ala
65             70             75
  
```

<210> 330
 <211> 70
 <212> DNA
 <213> Homo sapien

<400> 330

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cccaacacaa tggcccgatc ccattccctga ctccggcctc aggatcgtc gtctctggtc      60
gctgcagaca      70
  
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<210> 331
 <211> 22
 <212> PRT
 <213> Homo sapien

<400> 331

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Gln His Asn Gly Pro Ile Pro Ser Leu Thr Pro Pro Ser Gly Ser Leu
 1             5             10             15
Val Ser Gly Ser Cys Ser
      20
  
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<210> 332
 <211> 2507
 <212> DNA
 <213> Homo sapien

<400> 332

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tgggtgccgt gcagccggca gagatgggtg agctcatgtt cccgctgttg ctctctcttc      60
tgcccttctt tctgcatatg gctgcgcccc aaatcagga aatgctgtcc agtggggtgt      120
  
```

gtacatcaac	tgttcagctt	cctgggaaag	tagt.tgtggt	cacaggagct	aatncaggta	180
tcgggaagg	gacagccaa	gagctggctc	agngaggagc	tcgagtatat	ttagcttgc	240
gggatgtgga	aaagggggaa	ttggtggcua	aagagatcca	gaucacgaca	gggaaccagc	300
aggtgttgg	gcggaaactg	gacutgtctg	atactaagtc	tattcgagct	tttgcataag	360
gcttcttagc	tgaggaaaag	caactccacg	ttttgatcaa	caatgcaggc	gtgatgatgc	420
gtccgtactc	gaagacagca	gatggctttg	agatgcacat	aggagtcaac	caacttgggtc	480
acttcttcc	ancccatctg	ctgctagaga	aactaaaggc	atcagcccaa	tcagggatag	540
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<210> 333

<211> 3030

<212> DNA

<213> Homo sapien

<400> 333

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cgrcaaaagca	atgccaccca	tgccctgggg	tgccccaggg	gacgtcccca	gctcccgctg	360
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<210> 334

<211> 2417

<212> DNA

<213> Homo sapien

<400> 334

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<210> 335

<211> 2984

<212> DNA

<213> Homo sapien

<400> 335

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<210> 336

<211> 147

<212> PRT

<213> Homo sapien

<400> 336

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			20					25					30		
Pro	Lys	Gln	Pro	Gln	Lys	Arg	Ser	Arg	Ala	Ala	Phe	Ser	His	Thr	Gln
			35					40					45		
Val	Ile	Glu	Leu	Glu	Arg	Lys	Phe	Ser	His	Gln	Lys	Tyr	Leu	Ser	Ala
			50					55				60			
Pro	Glu	Arg	Ala	His	Leu	Ala	Lys	Asn	Leu	Lys	Leu	Thr	Glu	Thr	Gln
65					70					75					80

Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys Thr Lys Arg Lys Gln
 85 90 95
 Leu Ser Ser Glu Leu Gly Asp Leu Glu Lys His Ser Ser Leu Pro Ala
 100 105 110
 Leu Lys Glu Glu Ala Phe Ser Arg Ala Ser Leu Val Ser Val Tyr Asn
 115 120 125
 Ser Tyr Pro Tyr Tyr Pro Tyr Leu Tyr Cys Val Gly Ser Trp Ser Pro
 130 135 140
 Ala Phe Trp
 145

<210> 337
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 337
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 1 5

<210> 338
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 338
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<210> 339
 <211> 318
 <212> PRT
 <213> Homo sapien

<400> 339
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 Cys Thr Ser Thr Val Gln Leu Pro Gly Lys Val Val Val Val Thr Gly
 35 40 45
 Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg
 50 55 60
 Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu
 65 70 75 80
 Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val
 85 90 95
 Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys
 100 105 110
 Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala
 115 120 125
 Gly Val Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met
 130 135 140
 His Ile Gly Val Asn His Leu Gly His Phe Leu Leu Thr His Leu Leu

145 150 155 160
 Leu Glu Lys Leu Lys Glu Ser Ala Pro Ser Arg Ile Val Asn Val Ser
 165 170 175
 Ser Leu Ala His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly
 180 185 190
 Glu Lys Phe Tyr Asn Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala
 195 200 205
 Asn Ile Leu Phe Thr Gln Glu Leu Ala Arg Arg Leu Lys Gly Ser Gly
 210 215 220
 Val Thr Thr Tyr Ser Val His Pro Gly Thr Val Gln Ser Glu Leu Val
 225 230 235 240
 Arg His Ser Ser Phe Met Arg Trp Met Trp Trp Leu Phe Ser Phe Phe
 245 250 255
 Ile Lys Thr Pro Gln Gln Gly Ala Gln Thr Ser Leu His Cys Ala Leu
 260 265 270
 Thr Glu Gly Leu Glu Ile Leu Ser Gly Asn His Phe Ser Asp Cys His
 275 280 285
 Val Ala Trp Val Ser Ala Gln Ala Arg Asn Glu Thr Ile Ala Arg Arg
 290 295 300
 Leu Trp Asp Val Ser Cys Asp Leu Leu Gly Leu Pro Ile Asp
 305 310 315

<210> 340

<211> 483

<212> DNA

<213> Homo sapien

<400> 340

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 ctcctgtctg aggcctggagt gtctttattc ctggcgggag accgcacatt ccactgctga 180
 ggttggtggg gcgggtttatc aggcagtgat aancataaga tgtcalttcc ttgactcrrg 240
 ccttcaattt tctctttggc tgaacgacga gtccgtggtg tcccgatgta actgacccct 300
 gctccaaacg tgacatcact gatgctcttc tccgggggtg tgatggccrg ctgggtcacc 360
 tgcacaaatc cgcatttcga ctcttctctc aaactgtatg aagacacctg actgcacgtt 420
 tttctggggt tccagcatt taaagtgaan ggcagcactc ctaagctccg actcrgatgc 480
 ctg 483

<210> 341

<211> 344

<212> DNA

<213> Homo sapien

<400> 341

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 gctgcttac aagtattaaa tattttactt cttccataaa agagttagctc aaatatgca 180
 attaatitaa taattttctga tgatggcttt atctgcagta atctgtatct catctattag 240
 aatttactta atgaaaaact gaagagaaca aaatttgtaa cractagcac ttaagtactc 300
 ctgatttcta acattgtctt taatgaccac aagacaacca acag 344

<210> 342

<211> 592

<212> DNA

<213> Homo sapien

<400> 342

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cctggcaggt	aaaccaatgc	caagagagtg	atggaaacca	ttggcaagac	tttgttgatg	180
accaggatgg	gaattttata	aaaalattgt	tgatgggag	ttgctaaagg	gtgaattact	240
tccctcagaa	gagtgcasa	aaaagtccga	gatgctataa	tggcagctat	tttaattggc	300
aagtgccact	gtggaaagag	ttcclgtgtg	tgctgaagtt	ctgaaggggc	gtcaaattca	360
tcagcatggg	ctgtttgggt	caaatgcasa	agcaraggtc	tttttagcat	gctgggtctct	420
cccggtgctt	tatgcaata	atcgttctct	tctaaatttc	tcttaggctt	cattttccaa	480
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<210> 343

<211> 382

<212> DNA

<213> Homo sapien

<400> 343

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<210> 344

<211> 536

<212> DNA

<213> Homo sapien

<400> 344

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caactaacct	gccactaata	gttatgtcat	ccctcttatt	aatcatctat	ctagccttaa	480
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<210> 345

<211> 251

<212> DNA

<213> Homo sapien

<400> 345

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gcgtggggcc	ggaaatcaca	tctacactg	cccaggagcc	agacacattt	atggaaacaga	180
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<210> 346
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{282}
 <223> n = A,T,C or G

<400> 346
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 ctaagtcttg ttarccaaana aaggkaaaag aagagatctt ctgagttaca aattctggga 120
 agggugacta taactggctc ttgccctaag tgagagggtt tccctccgc accaaaaat 180
 agaaaggctt tctatttcac tggccagggt aggggggaagg agagtaactt tgagtctgtg 240
 ggtctcattt ccaaggctgc cttaactgot catnaaaacc aa 282

<210> 347
 <211> 201
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{201}
 <223> n = A,T,C or G

<400> 347
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 tctgagactg actggaccor cccagaccca gggcaaagat acatgttacc atatcatctt 180
 tataaagaat tcttttctgt c 201

<210> 348
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 348
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 agagagaaca gtgccagaat gaaactgacc ctaagtcacca ggtgcccctg ggcaggcaga 120
 agggagacat cccagcatgg aggggggttt atcttttcat cctaggtcag gtctaraatg 180
 ggggaaggte ttattataga actccfaaca gcccacctca ctctgccar ccaccgatg 240
 gccctgectc c 251

<210> 349
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 349
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 aacccctgag gatgccagag ctatgggttc agaactgggt gtgggtattat caacagagtt 120
 cagaagggtc tgaactctac gtgtaccag agaactaat gcaattcatg cattccactt 180
 agcaattttg taaraatarca gaancagacc ccagaggtct ttcaagatga ggaanaatcca 240

actccttggtt t

251

<210> 350

<211> 908

<212> DNA

<213> Homo sapien

<400> 350

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tatcaatatg	caggagccat	cttgcaggct	tgatgtctgg	tatctgggac	aacactgtga	840
aaaaaaggac	tacagtgttc	tatcgtttgt	tccgggtcct	gtacgatttc	agtatgtctt	900
aatgcag						908

<210> 351

<211> 472

<212> DNA

<213> Homo sapien

<400> 351

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gtcaaacctt	aatgcatttg	ctattgtgaa	ttaggattaa	gtagtatttt	tcaaaattca	120
catttaacttg	attttaaaac	cagwtctgyg	agtcatttac	cacaagctaa	atgtgtcacac	180
tatgataaak	acaaccattg	tattccctgt	ttctctaaaca	gtcctaattt	ctaacactgt	240
atatatccct	cgacatcaat	gaacttttgt	ttcttttact	ccagtaataa	agtaggcaca	300
gatctgtcca	caacaaactt	gcctctctcat	gccttgcctc	tcaccatgct	ctgctccagg	360
tcagccccct	tttggcctgt	ttgttttctc	aaaaacctaa	tctgcttctt	gcttttcttg	420
gcaatatata	ttttagggaag	atgttgcctt	gccacacac	gaagcaaatg	aa	472

<210> 352

<211> 251

<212> DNA

<213> Homo sapien

<400> 352

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caggctgctg	tccgtcctta	cgatgaagac	cacgatgcag	tttccaaaca	ttgccactac	180
atacatggaa	aggagggggga	agccaaaccca	gaaatgggct	ttctctaata	ctgggataacc	240
aataagcaca	a					251

<210> 353

<211> 436

<212> DNA

<213> Homo sapien

<400> 353

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gtatccaaaa	gcnaaacagc	agatatccaa	aattaaagag	acagagagata	garatttaca	180
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tcatgtctga	raaggctctc	ccttcaatgg	ggatgacaaa	ctccaaatgc	caacaaatg	360
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<210> 354

<211> 854

<212> DNA

<213> Homo sapien

<400> 354

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<210> 355

<211> 676

<212> DNA

<213> Homo sapien

<400> 355

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<210> 356

<211> 574

<212> DNA

<213> Homo sapien

<400> 356

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caagcttccc	atttctagat	ctcagtgcc	atgagtatct	gacacctgtt	cttctcttca	180
gtctcttagg	gaggcttaaa	tctgtctcag	gtgtgctaag	agtgcacagc	caaggkgttc	240
aaaagtccac	aaaactgcag	tctttgctgg	gatagtaagc	caagcagtgc	ctggacagca	300
gagttctttt	cttgggcbac	agataaccag	acaggactct	aatcgtgctc	ttattcaaca	360
ttcttctgtc	tctgcctaga	ctggaataaa	aagccaatct	ctctcgtggc	acaggggaagg	420
agatacaagc	tcgtttacat	gtgatagatc	taacaaagge	atctaccgaa	gtctggtctg	480
gatagacggc	acagggagct	cttaggtcag	cgctgctggt	tggaggacat	ccctgagttc	540
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<210> 357

<211> 393

<212> DNA

<213> Homo sapien

<400> 357

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aagccacnac	caaracttga	ttttatcaar	aaaaacccct	aatatataac	ggaaaaaaag	180
atagatataa	ttattccagt	tttttttaaa	cttaaaarat	attccatgic	cgaaattaara	240
araaratang	tgttatatgg	aaagaagggc	attcaagcac	actaaaraaa	cttgaggkaa	300
gcataatctg	tacnaaatta	aactgtcctt	tttggcattt	taacaaatct	gcaacgktct	360
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<210> 358

<211> 630

<212> DNA

<213> Homo sapien

<400> 358

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gcataagagta	gggaagctaa	tccagracag	ggaggtcaca	gagacatccc	taagggaagtg	180
gagtttaaac	tgagagdaagc	aagtgcctaa	actgaaggat	gtgttgaaag	agaagggaga	240
gtagaacaat	ttgggcagag	ggaaccttat	agaccotaag	gtgggaaggt	tcaaagdaact	300
gaaagagagc	tagaacagct	ggagccgttc	tccggtgtaa	agaggagtca	aagagataag	360
attaaagatg	tgaagattaa	gatcttggtg	gcattcaggg	attggcactt	ctacaagaaa	420
tcactgaagg	gagtaatgtg	acattacttt	tcacttcagg	atggccattc	taactccagg	480
gggtagactg	gactaggttaa	gactggaggc	aggtagacct	cttctaaggc	ctgogatagt	540
gaaagacaaa	aaataagtgg	gaaattcagg	ggatagtgaa	aatcagtagg	acttaatgag	600
caagccagag	gttccctcac	aaacaaccagt				630

<210> 359

<211> 620

<212> DNA

<213> Homo sapien

<400> 359

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ctcccccagaa gaataaagtg ctctgccagt cattaaayga ttaactgctgg tgaattaaat	180
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aggattaact gtcttaggaa cagatatasa gcttcgccac ggaagagatg gacaaagcac	300
aaagacaaca tgatacctta ggaagcaaca ctaccctttc aggcataaaa ttgggagaaa	360
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aatgtasgat aactttataa gaatttcggg tcaaataaaa ttctttgaag aaaacatcca	480
aatgtcattg aattatcaca tacttatctg gcatataacc tatgaaggca aaactaaaca	540
aaacaaagag tcacaccaa cnaaacctc aacttattt gtattctata acatacgaga	600
ctgtaaagat gtgacagtgt	620

<210> 360

<211> 431

<212> DNA

<213> Homo sapien

<400> 360

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tactcatcat ttttggccag cagttgttly atcaccanac atcatgccag aatattcagc	180
aaactttctt agctcttgag aagtcanaat ccgggggaat ttattcctgg caattttaat	240
tggaactcctt atgtgagagc agcggctacc cagctggggt ggtggagcga acccgtaact	300
agtggacatg cagtggcaga gctcctggta accaactaga ggaataraca ggcacatgtg	360
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<210> 361

<211> 351

<212> DNA

<213> Homo sapien

<400> 361

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caacnctgga ttcaatgtct gaacactcgc tctctgcttg ctggacttct ggggcgtca	300
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<210> 362

<211> 463

<212> DNA

<213> Homo sapien

<400> 362

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ccccggctac agaaatgaac aggttgggtg ttttcaggtg ccagtgctgg gtccagagct	180
cgtaaaggat ttccgcgtcc gtgtgcagg acagagctat atacttccct ttcttcccca	240
gtgtctcaaa tgaatatcc ccaaaggcgt cggtaggaaa ttcttgggtg tgttcttctg	300
agttccattt ctcaatttgg tggatctggg tgccttccat gtgtcgtctc tgggcatagc	360
caracttgca carattctcc ctgatagca cagtggtgtg gacagggaag aaggatttca	420
ctgagcctgc ttatggaaac tggatattgt agcttaataa gac	463

<210> 363

<211> 653

<212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(653)
 <223> n = A,T,C or G

<400> 363

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attcttggga	tccttggttc	agaattccat	ttacctctct	ggccagatcc	caccagaaatg	600
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<210> 364
 <211> 401
 <212> DNA
 <213> Homo sapien

<400> 364

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acgtgcataag	taaatcttta	catttgctat	ggcgttgcac	ttagaggactt	ggactgcaac	360
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<210> 365
 <211> 356
 <212> DNA
 <213> Homo sapien

<400> 365

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acattcggca	atgtuccctt	tgtagccagt	ttcttcttcg	agctccggga	gagcag	356

<210> 366
 <211> 1851
 <212> DNA
 <213> Homo sapien

<400> 366

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cttttcccca	tttagtatta	tggtggctgt	gggtctgtca	caggtgggtt	ttattacttt	1800
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<210> 367

<211> 664

<212> DNA

<213> Homo sapien

<400> 367

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accttataag	agcagtgtct	tggccattaa	tttatctttc	atcttagaca	gctagtgtga	180
gagtggtatt	tccatactca	tctggaatat	tcggtcagc	gccatgttcc	agcaacatta	240
acgcacattc	atcttctctg	cattgtacgg	crtgtcagta	ttagaccan	aaacaaatta	300
catatcttag	gaattcaaaa	taacattcca	cagctttcac	caactagtta	tatttaagg	360
agaaactcca	tttttatgcc	atgtattgaa	atcaaaccca	ctcactgtg	atctagttag	420
ctactgcata	cccttatcag	agctgtcttc	tttttgctgt	caagacatt	aagttgacat	480
cgtctgtcca	gcaggagttt	tactactctc	gaattcccat	tggcagagtc	cagatgtaga	540
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<210> 368

<211> 1512

<212> DNA

<213> Homo sapien

<400> 368

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<210> 369

<211> 1853

<212> DNA

<213> Homo sapien

<400> 369

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<210> 370
 <211> 2184
 <212> DNA
 <213> Homo sapien

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ttattgaatt	gcttctgtta	gacgggaaga	gctgggggtg	ttctcaggag	ccacogtgtg	300
ctggggcagc	ttcgggataa	cttgaggctg	catcacagg	gaagaaacac	aytccctgtc	360
gtggcagctga	tggtctgagg	cagaguttc	gtgtggtctc	ctgtgagtg	gcttcttctg	420
ggagttcttc	cttcatagtt	cateratag	gtccagagg	aaaattatat	tattttgtta	480
tggtgaaaga	gtattacgtc	gtgcagatat	actgagtg	cttcattctc	tgatgtgtga	540
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ctcaaaaaaa	aaanaaaaa	aaaa				2184

<210> 371
 <211> 1855
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (2)...(1855)
 <223> n = A,T,C or G

<400> 371

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<210> 372
 <211> 1059
 <212> DNA
 <213> Homo sapien

<400> 372

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gcgcttgggg	agactmcgat	gacagygcc	tcattggagc	caggatccac	gtccgtggag	180
aagatccggg	caagctccac	agagctgccc	tgggtgggta	aagtccccag	aaaggatctc	240
atcgtcatgc	tcagggaac	tgaygtgaac	nagarggaca	agcaaaagag	gactgctcta	300
cacttggcct	ctgccaatgg	gaattcagaa	gcagtaaaac	tactgctgga	cagacgatgt	360

caacttaattg	tacttgacuu	caaaaagagg	acagctccga	yaagggccgt	acaatgccag	420
gaagatgaat	gtgcgttaat	gttgctggaa	catggcaactg	atccaaatat	tccagatgag	480
tatggaaata	ccacuctrca	ctaygctrtc	tayaatgaag	ataaatcaat	ggccaaagca	540
ctgctcttat	ayggtgctga	tatcgaaatca	aaaaacaaag	tatagatcta	ctaacttlat	600
cttcaaaata	ctgaaatgca	ttcatcttta	catlgacgtg	tgttaaggcc	agtcctccgt	660
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ctttatttta	aataatgcta	tttccaaaga	agcattagag	ggtagagttt	ttttttttta	780
aacgcacttc	tggtaaatat	tttctgttga	aacactgaat	ttgtaaaagg	taatacttac	840
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<210> 373

<211> 1155

<212> DNA

<213> Homo sapien

<400> 373

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agcaacgtgg	gcacttctgg	agaccacgac	gactctgcta	tgaagacact	caggagcag	180
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ggcgctcttg	gagaccacga	cgactctgct	atgaagacac	tcaggaaaca	gatgggcaag	300
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gccagagagc	atgctgtttc	tagtcatcat	catgtaatct	gccagttact	ttctgactac	1080
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<210> 374

<211> 2000

<212> DNA

<213> Homo sapien

<400> 374

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agcaacgtgg	gcacttctgg	agaccacgac	gactctgcta	tgaagacact	caggagcag	180
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ggcgctcttg	gagaccacga	cgactctgct	atgaagacac	tcaggaaaca	gatgggcaag	300
tgggtgctgac	actgcttccc	ctgctgcccag	gggagcggca	agagcaagggt	gggcgcttgg	360
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gacaaagctcc	acagagctgc	ctggtagggg	aaagtcccc	gaaaggtatc	catcgtcatg	480
ctcagggaca	ctgacgtgaa	caagaaggac	aaagcaaaaga	ggaactgctc	acatctggcc	540

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<210> 375

<211> 2040

<212> DNA

<213> Homo sapien

<400> 375

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 gagctagaca caatgaaca tcagagccag ctaaaaaaa aaaaaaaa aaaaaaaa 2040

<210> 376

<211> 329

<212> PRT

<213> Homo sapien

<400> 376

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 20 25 30
 Glu Tyr Thr Ile Val His Ala Ser Phe Ile Ser Cys Ile Ser Ser Ser
 35 40 45
 Leu Asp Gly Gln Gly Glu Arg Gln Glu Gln Arg Gly His Phe Trp Arg
 50 55 60
 Pro Gln Arg Leu Leu Cys Glu Asp Ala Trp Glu Gln Glu Val Gln Val
 65 70 75 80
 Val Leu Pro Leu Leu Pro Leu Leu Gln Gly Ser Gly Lys Ser Asn Val
 85 90 95
 Val Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr
 100 105 110
 His Val His Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp
 115 120 125
 Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
 130 135 140
 Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser
 145 150 155 160
 Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
 165 170 175
 Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
 180 185 190
 Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
 195 200 205
 Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr
 210 215 220
 Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr
 225 230 235 240
 Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu
 245 250 255
 Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys
 260 265 270
 Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu
 275 280 285
 Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu

290		295		300
Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu				
305		310		315
Ser Met Leu Phe Leu Val Ile Ile Met				320
	325			

<210> 377
 <211> 148
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> {1}...{148}
 <223> Xaa = Any Amino Acid

<400> 377	
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Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Xaa Asp Lys	
	35 40 45
Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu	
	50 55 60
Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp	
65	70 75 80
Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp	
	85 90 95
Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro	
	100 105 110
Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp	
	115 120 125
Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser	
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Lys Asn Lys Val	
145	

<210> 378
 <211> 1719
 <212> PRT
 <213> Homo sapien

<400> 378	
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Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp	
	35 40 45
His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp	
	50 55 60
Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val	
65	70 75 80
Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn	

				85					90				95		
Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser
				100					105				110		
Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe
				115				120					125		
Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His
				130				135					140		
Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp	Leu	Ile	Val	Met
				145				150					155		160
Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala
				165					170					175	
Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	Val	Lys	Ileu	Leu
				180					185					190	
Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr
				195				200					205		
Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met
				210				215					220		
Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn
				225				230					235		240
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys
				245					250					255	
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly
				260					265					270	
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val
				275				280					285		
Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr
				290				295					300		
Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile
				305				310					315		320
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu
				325					330					335	
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val
				340					345					350	
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile
				355				360					365		
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Asn	Val	Ser	Arg	Thr	Arg	Asn	Lys
				370				375					380		
Pro	Arg	Thr	His	Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser
				385				390					395		400
Ser	Val	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys
				405					410					415	
Cys	Arg	Cys	Phe	Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly
				420					425					430	
Thr	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys
				435					440					445	
Met	Gly	Lys	Trp	Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly
				450				455					460		
Lys	Ser	Asn	Val	Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys
				465				470					475		480
Thr	Leu	Arg	Asn	Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys
				485					490					495	
Cys	Arg	Gly	Ser	Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp
				500					505					510	
Asp	Ser	Ala	Phe	Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu
				515					520					525	

Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp
 530 535 540
 Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln
 545 550 555 560
 Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val
 565 570 575
 Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn
 580 585 590
 Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu
 595 600 605
 Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp
 610 615 620
 Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys
 625 630 635 640
 Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys
 645 650 655
 Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys
 660 665 670
 Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala
 675 680 685
 Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly
 690 695 700
 Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser
 705 710 715 720
 Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser
 725 730 735
 His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln
 740 745 750
 Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys
 755 760 765
 Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser
 770 775 780
 Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp
 785 790 795 800
 Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly
 805 810 815
 Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn
 820 825 830
 Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe
 835 840 845
 Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser
 850 855 860
 Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn
 865 870 875 880
 Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu
 885 890 895
 Glu Gly Ser Glu Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile
 900 905 910
 Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn
 915 920 925
 Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro
 930 935 940
 Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu
 945 950 955 960
 Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe

	965		970		975
Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His					
	980		985		990
Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser Glu Ile Ser					
	995		1000		1005
Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu					
	1010		1015		1020
Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Ile Asp Thr Met Lys His					
	1025		1030		1035
Gln Ser Gln Leu Pro Arg Thr His Met Val Val Glu Val Asp Ser Met					
	1045		1050		1055
Pro Ala Ala Ser Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met					
	1060		1065		1070
Gly Lys Trp Cys Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys					
	1075		1080		1085
Ser Asn Val Gly Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr					
	1090		1095		1100
Leu Arg Ser Lys Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys					
	1105		1110		1115
Arg Gly Ser Gly Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp					
	1125		1130		1135
Ser Ala Met Lys Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His					
	1140		1145		1150
Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp					
	1155		1160		1165
Gly Asp Tyr Asp Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg					
	1170		1175		1180
Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val					
	1185		1190		1195
Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys					
	1205		1210		1215
Lys Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly					
	1220		1225		1230
Asn Ser Glu Val Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn					
	1235		1240		1245
Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys					
	1250		1255		1260
Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro					
	1265		1270		1275
Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr					
	1285		1290		1295
Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp					
	1300		1305		1310
Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val					
	1315		1320		1325
His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala					
	1330		1335		1340
Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala					
	1345		1350		1355
Val Cys Cys Gly Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn					
	1365		1370		1375
Ile Asp Val Ser Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr					
	1380		1385		1390
Ala Val Ser Ser His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr					
	1395		1400		1405

Lys Glu Lys Gln Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu
 1410 1415 1420
 Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly
 1425 1430 1435 144
 Ser Glu Asn Ser Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn
 1445 1450 1455
 Lys Asp Gly Asp Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser
 1460 1465 1470
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
 1475 1480 1485
 Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu
 1490 1495 1500
 Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys
 1505 1510 1515 152
 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
 1525 1530 1535
 Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu
 1540 1545 1550
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Gly Gln Pro Glu Lys Arg Ser
 1555 1560 1565
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
 1570 1575 1580
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
 1585 1590 1595 160
 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
 1605 1610 1615
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
 1620 1625 1630
 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
 1635 1640 1645
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
 1650 1655 1660
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
 1665 1670 1675 168
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
 1685 1690 1695
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
 1700 1705 1710
 Met Lys His Gln Ser Gln Leu
 1715

<210> 379

<211> 656

<212> PRT

<213> Homo sapien

<400> 379

Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
 1 5 10 15
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
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 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60

Cys Arg His Lys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu

Asn	Gly	Glu	Pro	Glu	Leu	Glu	Asn	Phe	Met	Ala	Ile	Glu	Met	Lys	
515							520					525			
Lys	His	Gly	Ser	Thr	His	Val	Gly	Phe	Pro	Glu	Asn	Leu	Thr	Asn	Gly
530						535					540				
Ala	Thr	Ala	Gly	Asn	Gly	Asp	Asp	Gly	Leu	Ile	Pro	Pro	Arg	Lys	Ser
545					550					555					560
Arg	Thr	Pro	Glu	Ser	Gln	Gln	Phe	Pro	Asp	Thr	Glu	Asn	Glu	Glu	Tyr
			565					570						575	
His	Ser	Asp	Glu	Gln	Asn	Asp	Thr	Gln	Lys	Gln	Phe	Cys	Glu	Glu	Gln
		580					585						590		
Asn	Thr	Gly	Ile	Leu	His	Asp	Glu	Ile	Leu	Ile	His	Glu	Glu	Lys	Gln
595						600					605				
Ile	Glu	Val	Val	Glu	Lys	Met	Asn	Ser	Glu	Leu	Ser	Leu	Ser	Cys	Lys
610					615						620				
Lys	Glu	Lys	Asp	Ile	Leu	His	Glu	Asn	Ser	Thr	Leu	Arg	Glu	Glu	Ile
625					630					635					640
Ala	Met	Leu	Arg	Leu	Glu	Leu	Asp	Thr	Met	Lys	His	Gln	Ser	Gln	Leu
			645					650						655	

<210> 380

<211> 671

<212> PRT

<213> Homo sapien

<400> 380

Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser	Ser	Val	Lys	Lys
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Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	Cys	Arg	Cys	Phe
		20					25						30		
Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp
	35					40					45				
His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp
50					55						60				
Cys	Arg	His	Lys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val
65				70					75						80
Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Asn
			85					90						95	
Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser
	100						105						110		
Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe
	115					120						125			
Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His
130					135						140				
Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp	Leu	Ile	Val	Met
145				150						155					160
Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala
			165					170						175	
Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	Val	Lys	Leu	Leu
	180						185						190		
Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr
	195					200						205			
Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met
210					215						220				
Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn

225					230					235					240
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys
				245					250					255	
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly
			260					265					270		
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val
		275					280					285			
Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr
	290					295					300				
Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile
305					310					315					320
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu
				325					330					335	
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val
			340					345					350		
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile
	355						360					365			
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp	Leu	Lys	Leu	Thr	Ser	Glu
	370					375					380				
Glu	Glu	Ser	Gln	Arg	Phe	Lys	Gly	Ser	Glu	Asn	Ser	Gln	Pro	Glu	Lys
385					390					395					400
Met	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp	Gly	Asp	Arg	Glu	Val	Glu
				405					410					415	
Glu	Glu	Met	Lys	Lys	His	Glu	Ser	Asn	Asn	Val	Gly	Leu	Leu	Glu	Asn
		420						425					430		
Leu	Thr	Asn	Gly	Val	Thr	Ala	Gly	Asn	Gly	Asp	Asn	Gly	Leu	Ile	Pro
	435						440					445			
Gln	Arg	Lys	Ser	Arg	Thr	Pro	Glu	Asn	Gln	Gln	Phe	Pro	Asp	Asn	Glu
	450					455					460				
Ser	Glu	Glu	Tyr	His	Arg	Ile	Cys	Glu	Leu	Val	Ser	Asp	Tyr	Lys	Glu
465					470					475					480
Lys	Gln	Met	Pro	Lys	Tyr	Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp
			485						490					495	
Leu	Lys	Leu	Thr	Ser	Glu	Glu	Glu	Ser	Gln	Arg	Leu	Glu	Gly	Ser	Glu
		500						505					510		
Asn	Gly	Gln	Pro	Glu	Lys	Arg	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp
	515						520					525			
Gly	Asp	Arg	Glu	Leu	Glu	Asn	Phe	Met	Ala	Ile	Glu	Glu	Met	Lys	Lys
	530					535				540					
His	Gly	Ser	Thr	His	Val	Gly	Phe	Pro	Glu	Asn	Leu	Thr	Asn	Gly	Ala
545					550					555					560
Thr	Ala	Gly	Asn	Gly	Asp	Asp	Gly	Leu	Ile	Pro	Pro	Arg	Lys	Ser	Arg
			565					570						575	
Thr	Pro	Glu	Ser	Gln											

<210> 381
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 381

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ccaatatccc agyagaagca ttggggaglt gggggcaggt gaaggaccca ggaactcacc	180
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caagcagtca g	251

<210> 382
 <211> 3279
 <212> DNA
 <213> Homo sapien

<400> 382

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cactgggagg ggacatcctg cagaaggtag gagtggagca acacccgctg caggggaggag	180
gagagccctg cggcacctgg gggagccagg gggagcagrac ctgcccaggg ctgggagggag	240
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gagcctctgt cctctgttly gactcctgc ccatattctt ctgaggtccc ctcccctag	960
catctctgtc tgttctgag agctgggaat tgcctcagt catctgctg ctgaggtctg	1020
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acacacagca aggttgaggg tgtaacata gcccacgctg tctggggg cctgggagc	1740
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tagggggaga aactgaaagc tgattaat t agggaggtt ctgaggtcc cccaaacc	1860
ggtcagattt gatgatttcc tagcaggat tacagaat t agagctatc atgctgtgt	1920
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tgatctagag tgtggagaaa acaggggaaa acttgcaglt acgagactg gcaacttgc	2040
ttacttaggt tttcagactg gcaggaggtc aaacctatta ggttgagggc cttgtggag	2100
gtagctgact cagctgagag aggaactagc cagggtgggg ccttccctt tggaggggg	2160

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gcataatcga cagttattct ctccagctgg agacttaagg acagcatata attctcccty 2220
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gtgtccaggg ttcttactgg gggctctgtag gacgagtatg ggtactctga ataattgacc 2340
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gttttcagac cttaaaaaa aaaaaaaa aaaaagtttt 3279

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<210> 383

<211> 155

<212> PRT

<213> Homo sapiens

<400> 383

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Met Ala Gly Val Arg Asp Gln Gly Gln Gly Ala Arg Trp Pro His Thr
      5                                10                    15

Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
      20                                25                    30

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
      35                                40                    45

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
      50                                55                    60

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
      65                                70                    75                    80

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala
      85                                90                    95

Trp Ala Leu Thr Gln Pro Pro Ser Gln Ser Pro Gly Pro Gln Ser Leu
      100                               105                    110

Pro Ser Thr Pro Ser Ser Ile Trp Pro Gln Trp Val Ile Leu Ile Thr
      115                               120                    125

Glu Leu Thr Ile Pro Ser Pro Ala His Gly Pro Pro Trp Leu Pro Asn
      130                               135                    140

Ala Leu Glu Arg Gly His Leu Val Arg Glu
      145                               150

```

<210> 384
 <211> 557
 <212> DNA
 <213> Homo sapiens

<400> 384
 ggatcctcta gagcggcgcg ctactactac taatttcgcg ggcgcgtcga cgaagaagag 60
 aaagatgtgt ttctgttttgg actctctgtg gtcccttcca atgctgtggg ttctccaacca 120
 ggggaaggggt ccccttttgc ttcgcaagtg cctaaaccaa gacactact ctaccatggg 180
 tctgcctcct ggccaagcag gctggtttgc aagaatgaa tgatgatgc taccagctagg 240
 actcaaccctt gaantggaaa gtcttgcact cccatttgcg ggatccgtct gtgcacatgc 300
 ctctgtagag agcagccttc cuayggacgt tggaaacagc tggcactgta aggtgcttgc 360
 tccccaaagac acatccctaaa aggtgtctga atggtgaaaa cgtcttccct ctttattgcc 420
 ccttcttatt tatgtgaaca actgttctgt ttttttcta ttttttttaa actgttaagt 480
 tcaattgltga aatgaatat catgcaacta aattatgcga ttttttttcc aagtaaaa 540
 aaaaaa 557

<210> 385
 <211> 337
 <212> DNA
 <213> Homo sapiens

<400> 385
 ttcccgggtg atgtgcgagg gaagacact ttaactatct tgaaggggct gtttctttta 60
 gtttctctag cagcagatgg gctaggagga agtgaccaca gtggttgat ctatgtgca 120
 tctcaagacc atctgtctgc ttcgagtang gacacatcat cactcctgca ttgttgatca 180
 aaagctggag gtgcttttcc tccagctaaag agcccttagc aaaaagctga atagacttga 240
 tatcagacag gtccagtttc cgcaccaaca cttgctgggt cctgtcgtg gtctggatct 300
 atttggccac caattccccc ttttccacat cccggca 337

<210> 386
 <211> 300
 <212> DNA
 <213> Homo sapiens

<400> 386
 gggcccgcta ccggcccgagg ccccgccctg cgagtcctcc tcccggggtg cctgcccgca 60
 gccgcctcgg ccccaaggggt gggcgcgggg ctgctctac cggctggcgg ctgttaactca 120
 gcgaccttgg ccggaaggct ctagcaaggc cccaccgacc ccagcccgcg cggcggcggc 180
 gggactttg cccggtgtgt gggcgggagc ggactgctg tccgcgagcg ggcagcgaag 240
 atgttagcct tcgtgcccag gaccgtgagc cgatcccagg gctgtggtgt aacctcagcc 300

<210> 387
 <211> 537
 <212> DNA
 <213> Homo sapiens

<400> 387
 gggccgaagt gggcaccag ggactcttct caggttccct tccctggatc atcagggctg 60
 cccctctctg tggcatcatg atcagcact atgagtctgg caaaagcttc ttccagaggc 120
 tgaaccagga ccggcttctg ggcggctgaa aggggcaagg aggcaggac cccgtctctc 180
 ccacggatgg gggaggggac ggaaggagac cagccaaagt ccttttctc agcactgagg 240
 gagggggctt gtttcccttc cctcccgccg aaaaagctcc gggcaggggc gtcctctctg 300


```

gaggccacgc atttctcag acacaacttc ttcctgctgc tccagtctgt gggatcaton 360
cttaccnann ccccaagtlc aagaccnaat ctccagctg ccccttctgt gtttccctgt 420
gtttgtgtga gctgggcctg tctccaggaa ccaagaaacc ctacgctctg tgtagtctcc 480
ctgaccttg ttaattctt aagtcctaa atgatgaact tcaaaaaaaa nnnnnnaa 537

```

<210> 388

<211> 520

<212> DNA

<213> Homo sapiens

<400> 388

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aggataattt ttaaaccaat caaatgnaaa anacaacaa anaaaaagc aantgtcatg 60
tgagggttaa ccagttttga tcccttaaat gtggaaaaag tangaggact attcagcact 120
gtttgaagat tgcctcttct ccagcttctg agaatgtgt tatttccctt gccagtgaa 180
ggaccccttc ccacacatgc ccagccca ccttcaagcat ggtcccttgc caccagga 240
ccaggaaact gctacttgtg gactctacca gagaccagga ggggttggtt agctcacagg 300
acttcccttc cccagaaga tttagcatcc aactcagact cactactaac tcaactagga 360
tcatactcaa ttgatgggta tttagacaatt ccattttctt ttgggttctt taaacagaaa 420
atcttctctc ttctcattac cagtaaaggc tcttggtatc ttctgttgg aatgatttct 480
atgaacttgt cttattttaa tgggtgggttt tttttctggt 520

```

<210> 389

<211> 365

<212> DNA

<213> Homo sapiens

<400> 389

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cgttgcacca gtttyacaga aggaagggcg gagcttattc aaagtctaga gggagtggag 60
gagtttaaggc tggatttcag atctgctcag ttccagccgc agtgtgacct ctgctccccc 120
aargactttc caaatatct cccagcgcc tccagctca ggcgtctag aagcgtcttg 180
aagcctatgg ccagctgtct ttgtgttccc tctcaccgc ctgtcctcan agctgagact 240
cccaggaaac ctccagacta ccttctctg ccttcagcaa ggggcttgc ccacattctc 300
tyagggctcg tggagaacc tagactccca ttgctagagg tagaaagggg aaggggtgctg 360
gggag 365

```

<210> 390

<211> 221

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> [1]... (221)

<223> n = A, T, C or G

<400> 390

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tgctcttcca tctctggccc gacttctctg tcaggaaagt ggggatggac cccatctgca 60
tacacggntt ctcatgggtg tggacacct ctgcttgagg ttccaggag gctctggct 120
gctctangay tctgancga nctgttgc cactntgaca naaggaaagg cggagcttat 180
traaagctca gaggagtgga aggaagttaa gctggatttc a 221

```

<210> 391

<211> 325

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(325)

<223> n = A,T,C or G

<400> 391

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tggagcaggt cccgaggcct ccttagagcc tggggccgac tctgtgncg tgcangcttt 60
ctctcgcgcc cagcctggag ctgctcctgg catctaccaa caatcagncg aggcgagcag 120
tagctagggc actgctgcga acagccagtc cnnatccat catgtacccc ggtgngctct 180
ncaattgat ntrcanagcc ctacccatcn tagttctgct ctcccaccgg ntacccagcc 240
cactgcccag gaatcctaca gccagtaccn tgtcccagcg tctctacctc ccagtacgat 300
gagacctcgg gctactacta tgacc

```

325

<210> 392

<211> 277

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(277)

<223> n = A,T,C or G

<400> 392

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atallgctta actccttctt ttatctcttt taacattttc atggngagag gttccatctc 60
agtctcactt nggcnagcgn ctctactctg agtctcttcc ccggcctggn ccagtngnaa 120
antaccngga accgncatgn cttaanaacc nctcggtttn tgggttnttc aatgacagca 180
tgcagtgcac caccctgtcc actaagtgat gctgtaggat taaagtctca cagtgggcgg 240
ctgaggatcc aggcgcgcgt cctgtgttgc tggggaa

```

277

<210> 393

<211> 566

<212> DNA

<213> Homo sapiens

<400> 393

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actagtccag tgtggtggaa ttgcggcccg cgtcgacgga caggtcagct gctcggctca 60
gtgatctaca ttctgaagtt gtctgaaaat gtcttcctga ttcaattcag cctaaacgtt 120
ttgccgggaa cactgcagag acaatgctgt gaggttccaa ccttagccca tctgcgggca 180
gaggaaggtct agtttgtcca tcagcattat catgatctca ggaactggtta ctctggttaag 240
gaggggtctc agagatctgt cctctttaga gacaccttac ttataatgaa gtatttggga 300
gggttggttt caaaagtoga aatgtcctgt attccgatga tcatcctgta aacattttat 360
catctatctc tcatccctgc ctgtgtctat tattatattc atatctctac gctggaaact 420
ttctgcctca atgtttactg tgcctttggt ttctactagt tgtgttgttg aaaaaaaaaa 480
catctctctg ctgagcttta atttttgtcc aaagttattt taactctatac aattaaagc 540
ttttgcctat ccaaaaaaaa aaaaaa

```

566

<210> 394

<211> 384

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)... (384)

<223> n = A,T,C or G

<400> 394

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gaacatacat gtcctcggcgc ctgagctgca gtctgacatu atcgccatca cgggctctgc 60
tgcgaattng gaccggggcna aggcctggat gtggagcgt gtgagggguc tacaggccna 120
gcaggaggag cgggctttta ggagttttta gntgagtgto aotgtagacc ccaattacca 180
tgcgaagatt atcggggagaa agggggcagt aattaccraa atcgggttgg agcatgacgt 240
gaacatccag tttcctgata aggacgatgg gggccagccc caggaccaaa ttaacatcac 300
agggtagcga aagaacacag aggcctgcag ggatgctata ctgaggaattg tgggtgaact 360
cgagcagatg gtttctgagg acgt 384

```

<210> 395

<211> 399

<212> DNA

<213> Homo sapiens

<400> 395

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ggcaaaaactg tgtgacctca atagacctc gnagatccaa ggccaagtat caggagtga 60
tcctgaccttg gaactccaaga cctacatcaa cagcctggct atattagatg atgagccagt 120
tatcagaggt ttcatcatcg cggaaattgt ggagctcagg gaaatcatgg cctctgaagt 180
attcagctct ttcagtarcc ctgagttctc tatagagttg cctaacacag gccaattgg 240
ccagctactt gtctgcaatc gtatcttcaa gaataccttg gcatccctt tgactgacgt 300
caagttctct ctgggaagcc tgggcactct ctcactacag acctctgacc atgggaggg 360
gcagcctggt gagaccatcc aatcccaact aaatgcac 399

```

<210> 396

<211> 403

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)... (403)

<223> n = A,T,C or G

<400> 396

```

tggagttntc agtgraaaca agccataaag ctccagtagc aaattactgt ctcaagaaa 60
gacattttca acttctgctc cagctgctga taaaaaaaat catgtgttga gcttgactcc 120
agacaaaggac aacctgttcc ttcataactc tctagagaaa aaaaggagtt gttagtagat 180
actaaaaaaa gttyatgaat aatctggata tttttcctaa aaagattccc tgaacacat 240
taggaaaatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctgagagagg 300
gtttagggga yggagtgagg gataaaagaa gyaaaaaaag aagagtgaga aaacctattt 360
atcaaaagcag gtgctatcac tcaatgttag gccctgctct ttt 403

```

<210> 397

<211> 100

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)... (100)

<223> n = A,T,C or G

<400> 397

actagtnacg tgtgggtggag ttgcggggcg cgtgcgccta naanccatct ctctagcaaa 60
 tccatuccey utccctgggtg gtnacagat gactgacaaa 100

<210> 398

<211> 278

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 398

ggggcgcgt cgaragcagt ttgcgcgcgc ctgcgcgccty ggtgggggatg tgcgcgcgc 60
 ccacctggac atctggaggt cagcggcctg gatgaagag cggccttcac ctggggcgat 120
 tccctactgt gctcgcacca gtgcggagag ctggaccgac agcgaggttg acctatcctg 180
 ctccgggcag cccatccacc tgtggcaglt cctcagggag ttgctactca agcccacag 240
 ctatggcgcg ttcattangt ggttcaccaa ggagaagg 278

<210> 399

<211> 298

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(298)

<223> n = A,T,C or G

<400> 399

acggaggttg aggaagcgnc cctgggctcg anaggatggg tccgcgcatt gacnccctcn 60
 ggggtgceng catggagcgc atgggcgcgc gctcgggcgc cggcatggat cgcgtgggt 120
 ccgagatcga gcgcattggc ctggctcatg accgcattgg ctccgtggag cgcattgggc 180
 ccggcattga gcgcattggc ccgttgggc tgcaccacat ggctccacn abtgancgca 240
 tgggcacagc catggagcgc attggctctg gcgtggagcn catgggtgac ggcattggg 298

<210> 400

<211> 548

<212> DNA

<213> Homo sapiens

<400> 400

acatcaacta ctccctcatt ttaagggtatg gcagttcctt tcatccctct ttcctgcctt 60
 gtacatgtac atgtatgaaa tctcctctct ttaccgaact ctctccacac atcacagggt 120
 caaagaacca cacgcttaga agggtaagag ggcaacctat gaaatgaat ggtgattct 180
 tgaagtctct tttccacgt tcaaggggcn atggcaggac ttgaggttgc gagttaagac 240
 tgcagagggc tagagaatta tttcatcacg gctttgaggc caccatgtc acttatcccg 300
 tataccctct caccatccgc ttgtctactc tgcagccccc aagatgcacn tgggcagcta 360
 gttgggcgca taattctggg cctttgctgt ttgttttaat tacttgggca tcccagggaq 420
 ctttccagtg atctctaccc atgggcgcgc ctccctgggt caagccctc ccaggccctg 480
 tcccccagcc ctcctgcgcc agcccacccg cttgccttgg tgcctagccc tcccatggg 540
 agcaggtt 548

<210> 401
 <211> 355
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(355)
 <223> n = A,T,C or G

<400> 401
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 tgaatgtctcc aagtagtcca ccttcattta actctttgaa actgtatcat ctttgccaaag 120
 taagagtggg ggcttatttc agctgtcttg acaaaatgac tggctcctga ctttaacgttc 180
 tataaattga tgtgctgaag caaagtgcgc atggtggcgg cgaagaagan aagatgtgt 240
 ttgttttgg actctctgtg gtctcttcca atgctgnggg ttctcaacca ggggaagggt 300
 cctttttgca ttgccaagtg ccataacctat gaggactact ctaccatggg tctgc 355

<210> 402
 <211> 407
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(407)
 <223> n = A,T,C or G

<400> 402
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 tctccatgco ggtggcatac ataggctcaa actaaaggaa tggagaaaca tttttcaagc 120
 aaatggaaaa cagaaaaaaa caggtgttgc actctactt tctgacaaaa cagactatgc 180
 gaataaagat aaaaaagaga aggacattac aaaggtggtc ctgaccttg ataatctca 240
 ttgcttgata ccaaccctgg ctgttttaant tgcacaaacc aaaaaggataa tttgttgagg 300
 ttatggagct tctcccttgc agagagtccc tgaatctcca aaatttgggt gagatgtaag 360
 gntgatattg ctgacacctc ctttctctga gtttactca ttccaa 407

<210> 403
 <211> 303
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(303)
 <223> n = A,T,C or G

<400> 403
 cagtatttat agcnaactg aaaagctagt agcaggcaag tctcaaatcc aggcaccana 60
 tcttaagcaa gagcatggc atggtgaaaa tgcaaaaggc gagtctggcc aatctacaa 120
 tagagaaaca gacctactca gtcatgaaca aaaaaggcaga caccacatg gatctcatgg 180
 gggattggat attgttatta tagagcagga agatgacagt gatctcatt tggcacaca 240
 tcttaacaaa gaccgaaacc catctatcca ataacctcc atttggtaac catgttgaaa 300
 gga 303

<210> 404
 <211> 225
 <212> DNA
 <213> Homo sapiens

<400> 404
 aagtgttaact tttaaaaatt tagtggattt tgaaaattct tagagggaag taaaggaaaa 60
 attgttlaaty uactcattta cttttacatg gtgaaagttc tctcttgatc ctacaaacag 120
 acattttcca ctngtgtttc catagttytt aagtgtatca gatgtgttgg gcatgtgaat 180
 ctccaagtgc ctgtgtaata aataaagtar cttkatttca ttcac 225

<210> 405
 <211> 334
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(334)
 <223> n = A,T,C or G

<400> 405
 gagctgttat actgtgagtt ctactaggaa atcatcaaut ctgagggttg tctggaggac 60
 ttcataacac ctcccccac atggaatcag ctccaggagg gtccaagtcc tctcttact 120
 tnatcccccac cccatgccaa aggaagacc tccctccttg gctcacagcc ctctctagge 180
 tcccagtgcc ctccaggaca gactgggtta tgttttcagg tccatccttg ctgtgagtgt 240
 ctggtgagggt tgtgcctcga gcttctgctc agtgcctcat ggacagtgcc cagcccatgt 300
 caetctercac tctctcanng tggatccccc cccat 334

<210> 406
 <211> 216
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(216)
 <223> n = A,T,C or G

<400> 406
 ttccatacct aatgagggag ttganatnac atnaaacag gagatgcatt gatctcaany 60
 gaaaacaaaca cccaataaac tcggagtgggc agactgacaa ctgtgagaca tycatttgct 120
 acnaaacaca aattttnatgt tgcaccccttg tttctcacc tgtgggttat gacaaagaca 180
 actgcaazag aatnttcaag aaggaggact gccant 216

<210> 407
 <211> 413
 <212> DNA
 <213> Homo sapiens

<400> 407
 gctgacttgc tagtatcatc tgcattcctt gaagvacagg aacttcattg cttyactcat 60
 gtaaatgcaa taggattaaa aaataaattt gatattcac tgcacacagc aaaaaatatt 120
 gtacaaacatt gccaccagtg tcagattcta uacutggcca ctgaggaagc agagattaat 180
 cccagaggtc tatgtcctca tctgttatgg caaatggatg tcatgacagt accttcattt 240

```

ggagaaattgt catttgcca tgcgacagtt gatacttatt cacatttcac atggggcaacc 300
tgccagacug gagaaagtct tcccatgtta aaagacattt attatcttgt ttctctgtca 360
tgggagttcc agaaagatt aaaacagaca atgggacagg ttctgtagta aag 413

```

```

<210> 408
<211> 183
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1) ... (183)
<223> n = A,T,C or G

```

```

<400> 408
ggagctngcc ctraatkcct ccatctctat gttaencatct ttaatgtctt ctgmnattaa 60
tncctaaacta gttatccctt aaagggcten ntatccctta actagtcctt ccatctgtag 120
cattatccctt ccagtattcn ccttctnttt catttactuc ttctgtgcta ccatgtact 180
ntt 183

```

```

<210> 409
<211> 250
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1) ... (250)
<223> n = A,T,C or G

```

```

<400> 409
cccacgcatg ataagctctt tatttctgta agtctgtcta ggaaatcatt aaatctgacg 60
gtgggtttgg ggactgaac aaacctctg taattaatca gcttccagt tctcccccta 120
gtcctcctt caacaacata ggaggatcct cccctcttt ctgctcacgg ccttatctag 180
gcttccagt gccccagga cagcgtgggc tatgtttaca gcgctcctt gctggggggg 240
ggcmtatgc 250

```

```

<210> 410
<211> 306
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1) ... (306)
<223> n = A,T,C or G

```

```

<400> 410
ggctgggttg caagaatgan atgaatgatt ctacagctag gacttaacct tgaantggaa 60
agtcttgcaa tccatttgc aggatccgtc tctgacacat cctctgtaga gagcagcatt 120
cccagggaac ttggaaacag ttggcactgt aaggtgcttg ctccccaga cacatcttan 180
aaggtgttgt aatggcgaac accgcttcc tctttattgc ccttcttat ttatgtgaac 240
nactgattgg ctttttttgn atcttcttta aactggaaag ttcaattgng aaatgaata 300
tcttgc 306

```

<210> 411
 <211> 261
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(261)
 <223> n = A,T,C or G

<400> 411
 agagatattt cttagggttaa agtccataga gttcccatga actatatgac tggccacaca 60
 ggaatctttt tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
 tttaaattgtc tgaattggaa cagatttcaa aaaaaaaccc ccaatctag ggtgggaaac 180
 aggaaggaaa gatgtgaata ggcctgaggg caaaaaacca atttaccat cagttccagc 240
 cttctctcaa ggnagggcaa a 261

<210> 412
 <211> 241
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(241)
 <223> n = A,T,C or G

<400> 412
 gtccaatgtt acrtgacatt tctacacac cccactcacc gatgtattcg ttgcccagtg 60
 ggaacataac agcctgaatt tggaaaaaatt aattgtgttt ctgcccagg aactactacg 120
 actgaatttg atggctccac aacataaac cagtgtaaa acagaagatg tggagggggg 180
 ctgggagatt tcactgggta cattgaattc caaactaac cangcaatta ccagccaac 240
 a 241

<210> 413
 <211> 231
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(231)
 <223> n = A,T,C or G

<400> 413
 aactcttaca atccaagtga ctcatctgtg tgcttgaac ctttccactg tctcatctcc 60
 ctcatccaag tctctagtac ctctctcttg ttgtcaaggc taatcaaat gaacacacaa 120
 aagtttactc tctcatcttg gaacataaaa actctcttct tcttgggtct gagggtctcc 180
 agaatccttg aatcanttct cagatcattg gggacaccan atcaggaacc t 231

<210> 414
 <211> 234
 <212> DNA
 <213> Homo sapiens

<400> 414
 actgtccatg aagcactgag cagaagctgg aggcacaaon caccagacac lcaacgcaag 60
 gntggagctg aaaaacataac ccaactctytc ctggaggcan tgggaagcct agagaaggct 120
 gtgagccaag gagggaggggt ctctcttttg catgggatyg ggatgaagta aggagagggg 180
 ctggaccccc tggagctga ttcacatyg ggggaggtgt attgaagtc tca 234

<210> 415
 <211> 217
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{217}
 <223> n = A,T,C or G

<400> 415
 gcataggatt aagactgagt atcttttcta cttctcttta actttctaag gggcacttct 60
 caaaacacag accaggtagc aatctctcac tgcctaaagg nctctcacac cactttctca 120
 cacttagcaa tagtagaatt cagtctact tctgaggcca gaagaatggt tcaquaadat 180
 antggattat aaaaatcac aattaagaaa aataatc 217

<210> 416
 <211> 213
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{213}
 <223> n = A,T,C or G

<400> 416
 atgcataatc aaaggaact gcttcgctt tagaagacat ctggactgct ctctgcatga 60
 ggcacagcag taaagctctt tgaatccag aatcaagaac tctcccttc agactattac 120
 cgaatgcaag gtggttaatt gaaggcact aattgatgt caaatagaag gatattgact 180
 atattggaac agatggagt ctaatacaa aag 213

<210> 417
 <211> 303
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{303}
 <223> n = A,T,C or G

<400> 417
 nagtctttag gcccatcagg gaagttcaca ctggagagaa gtcatacata tgaactgtat 60
 gtgggaagg cttactctg agttcaaatc ttcaagcaca tcagagagtc cactctggag 120
 agaagccaca caaatgcaat gagtgtggg agagcttcag gaggattcc cattatcaag 180
 ttcattatgt ggtcacaca ggaagagaac cctataaatg tgaatattgt ggggaagggt 240
 tcaatcaag ttgatattc caaatcctc agagggcca cagtatanen aaacctttta 300
 agt 303

<210> 418
 <211> 328
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(328)
 <223> n = A,T,C or G

<400> 418
 ttttttggcgg tgggtggggga gggacggggac angagtctca ctctgttgcc caggctggag 60
 tgcacaggca tgatcteggc tcactaccaac ccttgccctcc catgtccaaq cgattcttgc 120
 gccctcagcct tccctgtatg tagaattaca ggcacatgcc accacaccca gctagttttt 180
 gtattttttg tagagacagg gtttcacccat gttggccagg ctggctctca actcctnacc 240
 tcagnggtca ggcctggctct aaactcctga cctcaagtga tutgcccacc tcaagctccc 300
 aaagtgtctn gattacagga cgtgagcc 328

<210> 419
 <211> 389
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(389)
 <223> n = A,T,C or G

<400> 419
 cctcctcaag auggcctgtg gtcgcctcc cggcaaccac gaagcctgca glgcccattatg 60
 acccctgagc catggactgg agcctgaaag gcagcgtaca ccttgcctcc gatcttgctg 120
 ctctgttccc ctctgtgggt ccattccatag caccgttgtt gcactgagga ttgtgcagga 180
 cgagcaaggc caagctgggt caaaggagca ccagtcact ctgcccaggt gtgccaggca 240
 ccggttctcc agccacccac ctcaactcgt ccgcgaatg gcacatcagt tctcttacc 300
 taagggtagg accaaagggt atctgcttt ctgaagtcct ctgctctatc agccatracg 360
 tggcagccac tchggctgtg tggacggg 389

<210> 420
 <211> 408
 <212> DNA
 <213> Homo sapiens

<400> 420
 gtctctctta actcctgcca gaaacagctc tctcaacat gagagctgca cccctcctcc 60
 tggccagggc agcaagcctt agccttggtc tcttgtttct gctttttttc tggctagacc 120
 gaagtgtact agccaaggag ttgaagtctg tgactttggt gtttcggcat ggagaccgaa 180
 gtcccattga cacccttccc actgacccc taagggatc ctcatggcca caaggatttg 240
 gccaactcac ccagctgggc atygagcagc attatgaact tggagagtat ataagaaaga 300
 gatatagaaa attcttgaat gactcctata aacatgaaca ggttctatct cgaagcacag 360
 acgttgaccg gactttgatg aagtgcctatg acaaccctgg caagcccg 408

<210> 421
 <211> 352
 <212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (352)

<223> n = A,T,C or G

<400> 421

```
gctcaaaaat ctttttactg atnggcctgg ctacacaatc attgactatt acggaggcca 60
gagggagactg aggcctggcc tgggggacct gtgcctctca naagcacatt agattatcca 120
ttacttgaca gaacaggtct ttttgggtc cttcttctcc accacnatat acttgcactc 180
ctccttcttg aagattcttt gguagttgtc ttgtctataa cccacaggtg tggaaacaag 240
ggtgcaaatg gaattttctg ttctgtagca agtgcctgtc tacaaggtg gcaagtctgc 300
cactccagat ttattgggtg ttcttttctt ttgagatcca tgcatttctt gg 352
```

<210> 422

<211> 337

<212> DNA

<213> Homo sapiens

<400> 422

```
atgccaccat gctggcaatg cagcgggagg tgaaggacct gcatatccag cccaagctgg 60
cgatgatcga cggcaaccat tgcocgaagt tgcggatgac agccgaagcg gtggtcaagg 120
gcgatagcaa ggtgcgggag atngcggcag cgtcaatcct ggccaaaggtc agcngl'gac 180
gtgaaatggc agctgtcgaa ttgatctacc cgggttctgg catcgggagg cataggggct 240
atccgacacc ggtgcacctg gaagccttgc agcggctggg gcagcggcgg attcaccgac 300
gcttcttccg ccggtacggc tggcctatga aaattat. 337
```

<210> 423

<211> 310

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (310)

<223> n = A,T,C or G

<400> 423

```
gctcaaaaat ctttttctctg atctggcatg gctacacatc cattgactat tagaggccag 60
aggagactga ggcctggcct gggagccctg tgcctactan aagcncatta gattatccat 120
tacttgacag aacaggtctt ttttgggtcc ttcttctcca ccagatata cttgcagttc 180
tcttcttgaa agattctttg gcagttgtct ttgtcataac ccacaggtgt anaaacagg 240
gtgcaacatg aaattttctg ttctgtagca gtgcctgtct cacagttgtc aagctctgcc 300
tccgaattta 310
```

<210> 424

<211> 370

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (370)

<223> n = A,T,C or G

<400> 424

```

gctcaaaaat ctctctactg ataggcatgg ctacacaatc attgactatt agaggucaga 60
ggagaaatgag guctggootg ggagccctgt gctactaga agcacattag attatccatt 120
cactgacaga acaggtcttt tttygggtct tcttctccac cactatatac ttgcaagtct 180
ccttctttaa gattcttttg cagttgtctt tgcataaacc caccaggtga gaacatcct 240
ggttgaatct cctggaaactc cctcattagg tatgaattag catgatgcar tgcataaagt 300
caccgaaggtg gcaaaagatca caacgctgac cagganaaca ttcatgtga taagcaggac 360
tccgtcgaag

```

370

<210> 425

<211> 216

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(216)

<223> n = A,T,C or G

<400> 425

```

aattgctatn ntctattttg ccactcaaaa caattaccaa aaaaaaaaaa tnttaaatga 60
taacaaacna acatcaaggc aaaaananaa ggaatggntg actntgcata aatngggccga 120
anattatcca ttatnttaag gggtgacttc agntacagc acacagacaa acatgccag 180
gaggntntcn ggaacgctcg atgtntcttg aggagg

```

216

<210> 426

<211> 596

<212> DNA

<213> Homo sapiens

<400> 426

```

cttcagtgga ggataacccct gttgccccgg gccgaaggtc tccattaggc ctgattgat 60
tggcagtcag tgatggaagg gtgttctgat cattccgach gcccaaggg tgctggcca 120
gctctctgtt ttgctgaagt ggcagtagga cctaatltgt taattaagag lagatnggtga 180
gctgtccttg tattttgatt aacctaatgg ccttcccagc ccgaatcggg ttccagctgga 240
gacatcacgg caacttttaa tgaatgatt tgaagggtca ttaagaggca ctcccggtta 300
ttaggcagtc catctgcact gataactctt tggcagctga gctggtcggg gctgtggccc 360
aaacgacac ttggcctttg gttttgagat acaactctta atcttttagt catgattgag 420
ggtagatggc cttttcagct ttaccccaat ttgactgcc ttggaagtgt agccaggaga 480
atacartcar atactcgtgg gcttagaggc cacagcagat gtcattgggc taactgctga 540
gtcccgctgg tcccatccca ggaccttcca tcggcagga cctgggagcc cgtgct 596

```

<210> 427

<211> 107

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(107)

<223> n = A,T,C or G

<400> 427

```

gaagaattca agttaggttt attcaagggt ctlaagagga atctanana caggucacag 60

```

cccgaggagca gccttanaga gctccctttt gactgcccgg ctcaagng

107

<210> 428

<211> 38

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(38)

<223> n = A,T,C or G

<400> 428

gaatttcma ankangactt tattcaatat ttacacatt

38

<210> 429

<211> 544

<212> DNA

<213> Homo sapiens

<400> 429

ctttgtctgga cggaaataaa gtggacgcaa gcattgacctt ctgattgaggg cgcctgaattt 60
attgaagagc ggcctgcagcc ctgcgggttca gatttaaaatc cgagaatttgt atagacggccg 120
atatccacga actcctgaag gctttcttga ttatccaca atccaaatcat cggcttttcag 180
tttggatggt ggctcatenc ctgtagaacc tgccttggcc gtggctggaa tccactcgtt 240
gccttccact tcagttacac ctgactcaac atcctctcct gtlgggtctg tgcctgttca 300
agatactaag cncacatttg agatgcagca gncatctccc ccaattcctc ctgtccatcc 360
tgatgtgcag tttaaaaaatc tgccttctta tgcctgtcctt gactgttctc tcaagcctcc 420
gagtttagtt caaagcagta ttacgcgatt tcaagagaaq ttttttattt ttgctttgac 480
acctcaacaa gttcagagaga tatgcataac cggggatttt ttgccagggtg gtaggagaga 540
ttat 544

<210> 430

<211> 507

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(507)

<223> n = A,T,C or G

<400> 430

cttatcncaa tggggctccc aaacttgggt gtgcagtggg aactccgggg gaattttgaa 60
gaacactgac acccatcttc caccrcgaca ctctgattta attgggctgc agtgagaaca 120
gagcatcaat ttaaaaagct gccagagatg tctccttggg cagcgttgtg atcttctgcn 180
ccttngtgac ttatgtcaat gcattcatgt atttcatacc caatggggga gtccaggaq 240
attcaaccag gatgtttcta cncctgtggg ttatgacaaa gacaactgac aaggaatntt 300
caagcaggag gactgcaagt atatcgtggt ggagagagag gacccaaaaa agacctgttc 360
tgtcagtga tggataatct aatgtgcttc tagtaaggac agggctcccc gyucaggcct 420
cattctcctc tggcctctaa tagtcaatga ttgtgtagcc atguctatca gtaaaagat 480
ttttgagcaa aaaaaaaa aaaaaaa 507

<210> 431

<211> 392

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(392)

<223> n = A,T,C or G

<400> 431

```

gaaatctcag aatggataaa aacaaatgaa gtacaaata ttccagattt aatagcgat 60
aaacaagaaa gcacttatca gagggaacta caaatggagg tacaactctan aaccatcctc 120
tatcatggct aatgtgaga ttagnacagc tgtattattt gtacattgca aacacctaga 180
aagagatggg aaacaaaatc ccaggagttt tgggtgtggg gtccctgggt ttccaacaga 240
catcatttca gcatctctag attagggngg ttggggatca ttctggagtt ggaatgttca 300
acaaaagtga tgttgttagg taaaatgtac aacttctgga tctatgcaga catggaagg 360
gcaatgaatc tggcttttac tctgtgttct ct

```

392

<210> 432

<211> 387

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(387)

<223> n = A,T,C or G

<400> 432

```

ggtatccta cabaatcaca tatagctgta gtacatgttt tcattggngt agattaccac 60
gaatgcaagg caacatgtgt agatctcttg ttttattctt ttgtctataa tactgtattg 120
ngtagtccaa gctctcggna gtccagccac tgggaaacat gctcccttta gatlaacctc 180
gtggacnctn ttgttgnatt gtctgaacty tagngccctg tatcttctct ctgtctgnga 240
attctgttgc ttctggggca ttctcttngg atgcagagga ccaccacaca gatgacagca 300
ctctgaattg ntccaatcac agctgcgatt aagacatact gaaatcgtac aggaccggga 360
acaacgtata gaacactgga gtccctt

```

387

<210> 433

<211> 281

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(281)

<223> n = A,T,C or G

<400> 433

```

ttcaactagc anagaaact gcttcagggn glgtanaatg aaaggcttcc acgcagttat 60
ctgattaaag aacactaaga aggggacaaag gctagaagcc gcaggatgtc tacactatag 120
caggcnctat ttgggttggc tggaggagcl gtggaaacca tggagagatt gggctggag 180
atcgctgtgg ctatctctcn ttgntattac accagnaggy ntctctgnt gcccactggg 240
tnnaaaccy ntatacaata atgatagaaat aggacacaca t

```

281

<210> 434

<211> 484

<212> DNA

<213> Homo sapiens

<400> 434

```

tttctaaata aguatattagt gctcagttcc tactgggtac tctttctctc ccttctcttg 60
aatttaattc ttccaacttg caabcttgaa ggattacaca tttcactctg atgtatactg 120
tgcttgcaaaa aaaaaaaagt gtctttgttt aaaaattactt ggcttctgaa tcttctcttg 180
tttttcccca ttggaaactg tcatbaaccc atctctgaac tggtagaana acatctgaag 240
agctagttta ccagcatctg acaggtgaat tggatggctt ccagaacctt tccaccaga 300
cagcctgttt ctatcctgtt taataaatta gtttgggttc tctactgaa taacaaaccc 360
tgctccaaatc tgcacataa aagtcctgta ctggaagttt agtcagcacc cccaccacac 420
tttatttttc tatggtttt ttgaacata tgagtgtttt gaaataaag taccatgtc 480
tcta
484

```

<210> 435

<211> 424

<212> DNA

<213> Homo sapiens

<400> 435

```

gcgcgcgtca ggcgcgggtc ctttctgctt tccaghtcct ccttcaggga agccccatgt 60
gggtagcttc caatategca gggtcttact cctctgctc tataagctca aacccaccaa 120
cgatcgggca agtaaacccc ctccctcgcc gacttcggaa ctggcgagag ttccagcgca 180
atgggacctt ggggaggggg caagatagat ggggggggag ggcatgggtc ggggtgaccc 240
cttgagagaga ggaanaaggc caaanagggg gctgccacgg cactaacgg agatggccct 300
ggtagagacc ttgggggtc tggaaacctt ggactcccaa tgccttaact cccacatct 360
gctatcagaa acttaaaact ggggatttct tctgttttct actcgcaata anttcagagc 420
aaac
424

```

<210> 436

<211> 667

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... [667]

<223> n = A,T,C or G

<400> 436

```

accttgggaa nactctcaca atataaaggg tcttagactt tactccaat. tcaanaagg 60
tcttggccat gtatctctya aagttttccc aaggtagcta taaatcctt ataagggtgc 120
aguctottct ggaattcttc tgatttcaaa gtctcactct caagtctctg aanaagaggg 180
cagttcctga aagcgaggtg tagcaactga tcttcagaaa gaggaactgt gtgcacgggy 240
atgggctgccc agagtagggt agyattccag atgctgacac ctctcggggg aacaggggt 300
gccaggtttg tcatagcact catcaaagtc cggctcaaug ctgtgcttct aatataaacc 360
tgttcatgtt tataggactc attcaagaat tttctatatc tctttcttat atactctca 420
agttcctaatt gctgctccat gccaggtcgg gtgagttggc caaatccttg tggccatgag 480
gaktccttla tggggtcagt gggaaaggtg tcaatgggac ttgggtctcc atgccgaac 540
acraaagtca caaactcaa ctucttgggt agtaracttc ggtctagcaa gaaaaaagg 600
agaaacaaag aaccaagggt aaggcttgcg gctcctggag gaggaggggt. gcautctca 660
tgttgag
667

```

<210> 437

<211> 693

<212> DNA

<213> Homo sapiens

<400> 437

```

ctacgtctca accctcattt ttaygttaagg aatcttaagl ccaagatat taagtgaetc 60
acacagccag gtaaggaaag ctggattggc acactaggac tctaccatac cgggttttgt 120
taagctcag gttaggaggc tgaataagctt ggaaggaaat tcagacagct ttltcagatc 180
ataaagata attcttagcc catgttcttc tccagagcag acctgaaatg acagcacagc 240
aggtactcct ctattttcac cctctttgct tctactctct ggcagtcaga cctgtgggag 300
gccctgggag aaugcagctc tctggatglt tctacagatc atggactatt ctctgtggac 360
catttctcca ggtcacctc ggtgtcacta ttgggggggac agccagcacc tttagctttc 420
atttgagttt ctgtctgtct tcagttaggg aaacttttgc tcttcacact tccatclga 480
acacctaat gctgttgcct ctgaggtggg gaaagacaga tatagagctc acctatttta 540
tctattttct aggaactgag ggctgtgggg taccttgcgg tgcnaaaaca gactctgttt 600
taaggacatg ttgcttcaga gatgtctgta actatctggg ggtctgtgtg gctctttacc 660
ctgcatcatg tgcctctctg gctgaaatg acc

```

693

<210> 438

<211> 360

<212> DNA

<213> Homo sapiens

<400> 438

```

ctgcttatca caatgaatgt tctctgggc agcgttgtha tctttgccac ctctgtgact 60
ttatgcactg catcatgcta ttcatacct aatgagggag ttccaggaga ttcaaccagg 120
atgtttctac acctgtgggt tatgcnaag acaactgcc aagantcttc aagaggagg 180
actgcaagta tctctgtgtg agaagaagg cccaaaaaag acctgttctg tcagtgaatg 240
gataatctaa tgtgtttcta gtgggcacag ggctcccagg ctaggcctca ttctctctg 300
gctcttaata gtcaataatt gtgtagccat gccatcagt aaaaagattt ttgggcaaac 360

```

<210> 439

<211> 431

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(431)

<223> n = A,T,C or G

<400> 439

```

gttctctnta actcctgcc aaaaacagctc tctcaacat gagagctgca cccctctctc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gttttttttc tggctagacc 120
gaagctgtact agccaaggag tlgaaatttg tgactttggg atttcggcat ggagaccgaa 180
gtcccattga cacttttccc actgacccca taaaggacat ctcatggcca caaggatttg 240
gccaaactca ccagctgggc atggagcagr attatgaact tggagagtat ataaayaaaga 300
gatatagaan attcttgaat gactcctata aacatgaaca ggtttatatt cgaagcaong 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgctga cgcggccgag 420
aatttagtag t

```

431

<210> 440

<211> 523

<212> DNA

<213> Homo sapiens

<400> 440

```

agagatassag cttaggtcaa agttcataga gtcccatga actelatyac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgggc aggattagat aaggtgttc 120
tttaattgtc tgaattggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
aygaaggaaa gatgtgaata ggctgattgg caaaaaacra atttccccat cagtccagc 240
cttctctcaa ggaagggcaa agaaaggaga taaggtggag acatctgaaa agtcttctcc 300
actggaaaac tgcactatc tgtttttata ttctgttaa atttatatgag gttacagaac 360
taaaattta aactttacag aagatttga tctatgtat acatatagca gctottgaag 420
tatatatatc atagcaata agtcattcga tgganacaag cta 523

```

<210> 441

<211> 430

<212> DNA

<213> Homo sapiens

<400> 441

```

gttcttctca actcctgcca gaaacagctc tctcaacat gagagctgca cccctctcc 60
tggucagggc agcaagcctt agccttggct tcttgttct gtttttttc tggctagaac 120
gaagtgtact agccaaggag ttgaagtttg tgaatttggg gtttgggcat ggagacgaa 180
gtcccatcga cacttttccc actgaaccca taaaggaaatc ctcatggcca caaghatttg 240
gccaactrac ccagctgggc atggagcagc attatgaact tggagagtat atagaaaga 300
gatctcgaaa attcttgaat gagtcttata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgcctatga caaacctggc agcccgctga agggcccgcg 420
aatctgagag 430

```

<210> 442

<211> 362

<212> DNA

<213> Homo sapiens

<400> 442

```

ctaagggaatt agtagtgctc ccatcacttg ttggagtyt gctattctaa aagattttga 60
tttcttggaa tyacaattat attttaactt tggtagggga aagagttata ggaccacagt 120
cttcaactctt gatacttgta attaatctt ttattgcaat tgttttgacc attaatgat 180
atgttttagaa atggtcattt taccgaaaaa ttggaaaaat tctgataata gtgcagaata 240
aatgaattaa tgttttactc attttatatt gaactgttaa tgacaaataa aatttctttt 300
tgatcatttt ttgttttcat ttaccagcat aaaaactaag aattaaaagt ttgatcacag 360
tc 362

```

<210> 443

<211> 624

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(624)

<223> n = A,T,C or G

<400> 443

```

tttttttttt gcaacacaaat atacatcaca gtgaatgtg caatccttgc aatttgcaag 60
ttgaazagaat taaatccaga ggaggggaga gaaggaatc tcagttagga ctgagcacta 120
aatgcttatt ttcaazagaaa tgaagagagc agaaagcaat tcaaggtacc ctgcttcttg 180
tgcctggctag tactcgggtc ggtgtcagca gcacgaggaa ttgaacattg caatgtcgag 240

```

```

cccaaacac agaaatggg gtgaattgg ccaacttct attaacttgg ttctctgttt 300
tataaattat tttgaataat atcacctact tcaaaaggga gttatgaggg ttaaatganc 360
taacgctac aaaaacattt aacatagata acataggtgc aagtactatg tatctggtac 420
atggttaaaa tctttattat taaggtcaac gctaaaatga atgtgtgtgc atatgctaat 480
agtacagaga gagggcactt aaaccaacta agggcctgga gggaaaggltt cctggaaaga 540
ngatgcttgt gctgggtcca aatcttggtc tactalgaac ttggccaaat tafttaaaact 600
ttgtccctat ctgctaaaca galc

```

624

<210> 444

<211> 425

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(425)

<223> n = A,T,C or G

<400> 444

```

gcacatcatt nntcttgcat tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60
gaagctttgt ccaggcctgt gtgtgaaccc aatgttttgc ttagaatatg acaagtaag 120
ttcattgcta tagcataaaa caaaatttgc ataagtggta gtacagcaat ccttgaalgc 180
tqcttaattg gagaggttgg taaaatcctt tgtgcacac tctaactccc tgaatgtttt 240
gctgtgctgg gacctgtgca tgcacagaca ggccaagctg gctgaagaag caaccagcca 300
cccttqcaat ctgccaactc ctgctggcag gatttgtttt tgcatacctgt gaagagccaa 360
ggaggcacca gggcat.aagt gaagtgaact atggtcgacg aggcgcgcaa cctagtagta 420
gtaga

```

425

<210> 445

<211> 414

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 445

```

catgtttatg nttttggatt actttgggca cctagtgttt ctaaatcgta tatcattctt 60
ctctgttttt caaaagcaga gatggccaga gtctcaacaa actgtatctt caagctcttg 120
tgaatttctt tgratgtggc agattatttg atgtagtctt cttaactag catatnaatc 180
tgggtgtgtt cagatnaatg aacagcaaaa tgtgggtggaa ttaccatttg gaacattgtg 240
aatgaaaaat tgtgtctcta gatcatgtaa caaataacta ttccctaacc attgatcttt 300
ggatttttat aatcctartc acaaatgact aggccttctcc tcttgtattt tgaagcagtg 360
tgggtgctgg attgataaaa aaaaaaaaag tcgacgcggc cgggaattta gtat

```

414

<210> 446

<211> 631

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(631)

<223> n = A,T,C or G

<400> 446

```

acaaattaga aaaaagtgcg agagaaracc acataaccttg tcgggaacat tacaatgggt 60
tctgcattga tgggaagtgt gagcattctt tcaatatgca ggagccalcl tgaaggtgtg 120
atgctgggtta tactggacaa cactgtgaaa aaaaggacta cagtgttcta tangltgttc 180
cgggtcctgt acgatttcag tahrtcttaa tcgaaagtgt gattgggaac attcagathg 240
ctgtcatctg tctggtgttc ctctgcattc caagggccaa kutttaggta atagcatttg 300
actgagattc gtaaatcttc caacattcca ggaatgccc cagaagcaac agaattcaca 360
ganagaagca aaatacaagg cactacagtt cagacaalac aacagagagc tccatgnggt 420
taactcaag ggagcatgtt tcacagtggt tggactaccg agagcttggg utacacaata 480
cagtatctat gacaaaagaa taagacaaga gatctacaca cyttgctctg catllytgg 540
aatctacacc aatgaaaaca tgtactacag utatatttga tcatglatgg utatatttga 600
aatagratatc abtgtcttga tgtttttttt g 631

```

<210> 447

<211> 585

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (585)

<223> n = A,T,C or G

<400> 447

```

ccttgggaaa antnucacaa tataaagggt cgtagacttl actocanatt ccaaaaggt 60
cctgggcatt taatctgaa agttttccc aggtagctat aaatcctta tanygtgca 120
gctctctctg gaattctctt gatttcaag tctcactcnc aagttcttga aaacgagggc 180
agtctctgaa aggcaggtat agcaactgat ctccagaaag aggaactgtg tgcacuggga 240
tgggctgcca gagttaggat ggaatccaga tgcctgacac tcttggggga aacagggctg 300
ccagggttgt catagactc atcaaatgcc ggtcaatgct tgtgcttcta atatcaacct 360
gttcatgttt ataggactca tccaggaatt tctatatct ctltcttata tactctccaa 420
gttcatcaatg ctgctccatg cccagctggg tgaatlyggc aaatccttgt ggcatgagg 480
attcctttat ggggtcagtg ggaaggtgt caatgggact tgggtctcca tgcgaaaca 540
ccaaagtcac aaattcaac tcttggcta gfacacttgg gtcta 585

```

<210> 448

<211> 93

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (93)

<223> n = A,T,C or G

<400> 448

```

tactctggg tcatctgan nncggactg acctgcccag ccttgcggan gggucnccat 60
ggctccctag tgccttggag agganggggc tag 93

```

<210> 449

<211> 706

<212> DNA

<213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(706)
 <223> n = A,T,C or G

<400> 449

```

ccaagttcat gctntgtgct ggacgctgga caggggggcaa aagcnncttgc tegtgggtca 60
ttctgancac cgaautgacc atgccagccc tgccgatggc cctccatggc tccctagtgc 120
crtggagagg aggtgtctag tcagagagta gtccctggaag gtcgctctctg ngaggagaca 180
cggggacacgc atcctgcaga tggtcggggc cgtcccatte gccattcagg ctgcgcaact 240
gttgggaagg gcgacgggtg cgggcctctt cgtatttanc ccagctggcg aaagggggat 300
gtgctgcacg gcgattcaag tgggtaangc caggggtttc ccagtcncgc cgttgtaaaa 360
cgacggccag tgaattgaat ttaggtgacn ctatagaaga gctatgacgt cgcattgcacg 420
cgtacgtcaq cttggatcct cttagagcggc cgcctactac tactaaatc gcggcgcgt 480
cgacgtggga tcncactga gagaagtggg agtgacatgt gctggacnct gtccatgaaq 540
cactgagcag aagctggagg cacaacgcnc cagcactca cagctactca ggaaggctgag 600
aacaggttga acctgggagg tggaggttgc aatgagctga gatcagggcn ctgncccc 660
gcattggatga cagagtgaaa ctcactctta aaaaaa aaaaaa 706

```

<210> 450
 <211> 493
 <212> DNA
 <213> Homo sapiens

<400> 450

```

gagacggagt gtcaactctgt tgcccagggt ggagtgcagc aagacactgt ctaagaaaaa 60
acagttttta aaggttaaaa aacataaaaa gaaalatcct atagtggaaa taagagagtc 120
aaatgaggtc gagacttta caaagggatc ttacagacat gtgcgcata tcaactgcacg 180
agcctaagta taagaaacac ctttggggag aaacacatct ttgacagtga ggtacaattc 240
caagtcaagt agtgaaatgg gtggaattaa aotcaaatla atcttgccag ctgaacgca 300
agagacactg tcagagagtt aaaaagttag ttctatccat gagggtgatc cacagcttc 360
tcaagtcacac acatctgtga actacagac caagttctta aacacactgt caaactctgc 420
tacacatcag aatracctgg agagttttac aaactcccc tgcagagggt cgaagcggcc 480
gcgaattctag tag

```

493

<210> 451
 <211> 501
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(501)
 <223> n = A,T,C or G

<400> 451

```

ggggcgctcc catteggcat tcaggctguy caactgttgg gaaggggcat cgggtgcgggc 60
ctcttcgcta ttacggcagc tggcgaaagg gggatgtgct gcaaggcgat taagtctgggt 120
aacggcaggg ttttcaggc cncgacgttg taaaangcgc gcagtgant tgaattcayg 180
tgacnctata gaagagctat gacgtcgcat gvacgcgtac gtaagntlga atcctctaga 240
ggggcgccct actactata aattcgcggc cgcgtcgacg tgggatccnc actgagagag 300
tgggagagtg catgtgctgg acnctgtcca tgaagcactg agcagagagc ggaagtcacaa 360
cgncccagac actcacagct aotcaggagg ctgagacacg attgaacctg ggagggtgag 420
gttgcacatg gctgagatca ggcncctgcn cccagcactg gatgaragag tgaactcca 480

```

tcttaaaaaa aaaaaa00000 A

501

<210> 452

<211> 51

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(51)

<223> n = A,T,C or G

<400> 452

ggaggggttt accnttaca cnccttttag gatgggnntt ggggagcaag c

51

<210> 453

<211> 317

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(317)

<223> n = A,T,C or G

<400> 453

tacatcttgc tttttccca ttggaantag tcattacccc atctctgaac tggtagaana 60
 acatctgaag agctagtctc tcagcatctg gcaagtgaat tggatgggtc tcagaacctc 120
 ttaccccane gaagcctgtt ctatcctgtt taataaatta gtttgggttc tctacatgca 180
 taacaaaccc tgcctcaatc tgcacacaa aagtctgtga cttggaagtt antcagcacc 240
 cccaccasac ttatatttct catgtgtttt ttgcaacata tgaagtgttt gaaataagg 300
 taacctgtc tttatta 317

<210> 454

<211> 231

<212> DNA

<213> Homo sapiens

<400> 454

ttggaggtac aatcaacttc caggggttag tttcttcta tagatgagtc agcattaata 60
 taagcacgc caggtcttg agggagtctt gaattctctt ctgtcactc agtagaacca 120
 agaagacca atcttcttc atccagctt gcaacaaaa ttgtcttct aggtcttcac 180
 ccttcttctt tcaagtgttc aaagctctc acaatttcat gaacaacagc t 231

<210> 455

<211> 231

<212> DNA

<213> Homo sapiens

<400> 455

taccaaagag ggcataata tcagtctcac agtaggggtc accatctctc aagtgaana 60
 catgttccg aatggggttt cccagggcta cacacacaaa acaggaaaca tgccaagttt 120
 gtttcaargc atgagtgact tctccaagga tcttcttly gaatcgacca cattcagggg 180
 caaagaattt ctcatagcac agctcaaat acagggtctt tttctctct a 231

<210> 456
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 456
 ttggcaggga ccccttaccaaa gtagacacca taccttatgc gttattaggt ggnataatca 60
 ctccattccg tattatcgtt atctattcttg gaggaaacct gtctgtttac tgtaaccttt 120
 tgcactcaaa ttcccttctc aggnataact acctaggccac catttacaaa ggcattggaa 180
 cctttttatt tgggtgcagct gctagtcaat ccttgactga cattgccaag t 231

<210> 457
 <211> 231
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(231)
 <223> n = A, T, C or G

<400> 457
 ctaggtaccc aggggtctga aaatctctnn ttantagtc gatagcaaaa ttggttcata 60
 gcattccctta atctgattct gctataakta gattttctc cattagagtt cctacagttt 120
 catttgattt tatttagcaat ctctctcaga agaccttga gatcatttag ctttgctacc 180
 agttgtctaa atcgatgctt catttccctt gaggctctgc tggcttctgc a 231

<210> 458
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 458
 aggtctgggt ccccccaatt caatccctt ctactctctc taggaactggg ctgggccaag 60
 agaagagggg tggattaggga agcrgttgag atctgaagcc ccacctcta ccttccctca 120
 acaccctaac cttaggtaac agcatttggg attatcattt ggyatgagta gaatttccaa 180
 ggtcctgggt taggcatttt gggggggccag acccaggag aagaagcttc t 231

<210> 459
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 459
 ggtaccgagg ctgctgaca cagagaaaac ccaacgcgag gaaaggaatg gccagccaca 60
 ccttcgcgaa accttgggtg gccacacagc cctaacggga caggacagay agacagagca 120
 gccctgcact gtttctctc caccacagcc atcctgtccc tcattggctc tgtgcttcc 180
 actatccaca gtaccgtcc caatgaaaa caagaaggag cccctccac a 231

<210> 460
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 460

```

gcagggtatga catgctgcga caacagatgt gactaaggac ggccggggac atggggaggg 60
cctatcacc cttctctggg gactgcttct tcacagtgat catgagcct agcagcaaat 120
ccacactccc cccacggcaca cggccagcct ggagccccaca gaagggtcct cctgongcca 180
gtgggagcttg gtccagcctc caglcacccc ctaccaggct taaggataga a 231

```

<210> 461

<211> 231

<212> DNA

<213> Homo sapiens

<400> 461

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cgagggtttga gaaactctaa tctgcaagggtt agccgagaag caggcuygctt agggagggttc 60
gcgtgtgtct cagaaagagtg tctgcatgnc agagggggaaa caggcgcttg tctgtccttg 120
gtgggggttca gtgaggagtg ggaattctgt tcagcagaa caggcccttg ggtgaatagg 180
aggggggattc catgguactg atagagcctt atagtttcag agctgggaat t 231

```

<210> 462

<211> 231

<212> DNA

<213> Homo sapiens

<400> 462

```

aggtaccctc attgtagcca tgggaaaatt gatgttcagt ggggatcagt gaalttaattg 60
gggtcatgca agtataaaaa ttaaaaaaaa agtaattcat gcccaatctc atatgatgtg 120
gaagaactgt tagagagacc aacagggttg tgggttagag attccagag tcttacattt 180
tctagaggag gtatttaatt tttttcact cctccagtgt tgtatttagg a 231

```

<210> 463

<211> 231

<212> DNA

<213> Homo sapiens

<400> 463

```

tactccagcc tgggtgacaga gggagaccct atcaccggcc cccacccccc caaaaaaaaa 60
actgagtaga caggtgtcct cttggcatgg taagtcttaa gtccctccc agatctgtga 120
catttgacag gtgtctttc ctctggaccc cgggtgtccc atctgagtga gaaaagacag 180
tggggagggtg gatcttccag tcgaagcggc atagagccgc gtgtgaaaag c 231

```

<210> 464

<211> 231

<212> DNA

<213> Homo sapiens

<400> 464

```

gtatctctaa attctatcta agctgccttt tctgggtggg aaagtctaac cttagtgact 60
aaggacatca catatgaaga atgtttaagc tggaggtggc aacgtgaatt ycaaacaggg 120
cctgtctcag tgaactgttg cctgtagtc cagctcttg ggagtctgtg tgaggccagg 180
gggtgcagcg caccagctag atgctctgta attctaggc cccattttcc c 231

```

<210> 465

<211> 231

<212> DNA

<213> Homo sapiens

<400> 465

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catgttattg tagctgtggt aatgctgggt gcattctcaga cagggttaac ttcatgtctct 60
gtggcaaat agcaacaaat ttgacataca tatttatggg ttctgtatct ttgttgatga 120
aggatggcac aatttttggc tgtgttcata atatactcag attagttcag ctccatcaga 180
taaatggag acatgcagga ctttgggta gtgtgttagc tctggtaatg a 231

```

<210> 466

<211> 231

<212> DNA

<213> Homo sapiens

<400> 466

```

caggtacctc tttccattgg atactgtgct agcaagcatg ctctccgggg tttttttaat 60
ggccttcgaa cagaacttgc cacatcccca ggtatantag tttctaacct ttgccagga 120
cctgtgcaat caaatattgt ggaggaattc ctactggag aagtcacaaa gacttatgac 180
aatcatggag accagtccca caagatgaca accagtctt gtctggggct g 231

```

<210> 467

<211> 311

<212> DNA

<213> Homo sapiens

<400> 467

```

gtacacccctg gcacagtcga atctgaactg gttcgggact catctttcat gagatggatg 60
tggcggcttc tctccttttt catcaagctt ctccagcagg gagcccgagc cagcctgcac 120
tgtgccttaa cagaagggtct tyagattcta agtgggaatc atttcagtga ctgtcatgtg 180
gcctgggtct ctgcccaagc tctaatgag acttatgcaa ggcggctgtg ggaagtcagt 240
tgtgacctgc tgggctccc aatagactaa caggcagtcg cagttggccc caagagaaga 300
ctgcagcaga c 311

```

<210> 468

<211> 3112

<212> DNA

<213> Homo sapiens

<400> 468

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catttgtgtg ggagaaadac agaggggaga ttgtgtggc tgcagccgag ggagacccagg 60
aagatctgca tgggtgggaag gacctgaltga tacagagtct gataggagac aattaaaggc 120
tgggaaggcac tggatgctg atgatgaagt ggactttcaa actggggcac tactgaanag 180
atggggtatg cagagacaca ggagatgagt tggagccagc tcaataacaa agtgggtcaa 240
cgaggacttg gaattgcctg gagctggagc tgaagtttag cccaattgtt tactagttga 300
gtgaatgtgg atgattggat gatcatttct catctctgag cctcagggtt cccatccata 360
aatgggata cacagtatga tctataaagt gggaltatagt atgatctact tcactgggtt 420
atttgaaggga tgaattgaga taatttattt caggtgccta gaaacatgcc cagattagta 480
catttgggtg aaactgagaaa tggcataaca ccaaatltta tatatgtcag atgttactat 540
gattatcatt caatctcata gttttgcctt ggcccaattt atctcactt gtgctcaac 600
aaattgaaat gttaacaaaag gaatctctgg tccgtggtaa tggctgagca cuactgagca 660
tttccattcc agttggcttc ttgggtttgc tagctgcata actagtcata ttaataaat 720
gaagttttta cattcttcca gtgatttttt tatctcactt ttgaagatcc tatgttatgt 780
gattaaataa agaaccttgag aagaacaggt ttcatataac ataaaatcaa tgtagacgca 840
aatttctctg atgggcaata cttatgttca caggaaatgc tttaaatatg gcagaagata 900
atttaattgg aatggacaaa gtgaacaaat tagacttttt ttttttttll ggaagtatct 960
ggatgttctt tagtccactta agggagaact gaaaatagc agtgagttcc acatcatcca 1020
acctgtgagx ttaaggctct ttgtggggaag ggcaaaagat ctgtcaaltl acagtttctt 1080
tccaaagcca angtcgatct ttgaacata tcaagctct lcttcagac aaataatcta 1140
tagtacctct ttcttatggg atgcatttat gaaataggt ggtgtcacc atctagtcac 1200

```


tttagctctc	aaaatggllc	atlttaagag	aaagtllctg	aatctcatat	ttattcctgt	1260
gyaaggaacg	cattgtgggt	tggactllat	aaagtcttta	ttcaautaaa	tagggtgagaa	1320
ataagaaagg	ctgctgactt	tacocatctga	ggcncacacat	ctgctgaaat	ggaghtaat	1380
aaatccactn	gaacacagca	gatgacaaata	taagtgtctaa	gtagtgacnt	gtttttgcac	1440
atltcnagcc	cctttaaata	tcuacacaca	caggaagcac	anaaggaagc	acagagatcc	1500
ctgyyagaaa	tgcocggccg	ccatcttggg	tcategatga	gcclogccvt	gtgcccggic	1560
ccgcttgtga	gggaaggaca	ttagaanaatg	aattgttgtg	ttccttaaaag	gatgygcagg	1620
aaawcagatc	ctgttgttga	tatttatttg	aacgggatta	cagetttgaa	atgaagtcac	1680
aaagt.gagca	ttatcnaaga	gaggaanaaa	gacgagaana	tcttgatggc	ttcaaaagac	1740
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accacggggc	agaggggicag	gattctggcc	ctgctgacct	naactgtgrgt	tcataaccac	1860
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C12N 15/12, C07K 14/47, C12Q 1/68, A61K 39/395, G01N 33/68, 33/574, C07K 16/30, C12N 15/62, 5/02 // A61P 35/00		A3	(11) International Publication Number: WO 00/04149
(21) International Application Number: PCT/US99/15838		(43) International Publication Date: 27 January 2000 (27.01.00)	
(22) International Filing Date: 14 July 1999 (14.07.99)		(74) Agents: MAKI, David, J. et al.; Seed and Berry LLP, 6300 Columbia, 701 Fifth Avenue, Seattle, WA 98104-7092 (US).	
(30) Priority Data:		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
09/115,453 14 July 1998 (14.07.98) US 09/116,134 14 July 1998 (14.07.98) US 09/159,822 23 September 1998 (23.09.98) US 09/159,812 23 September 1998 (23.09.98) US 09/232,880 15 January 1999 (15.01.99) US 09/232,149 15 January 1999 (15.01.99) US 09/288,946 9 April 1999 (09.04.99) US		Published <i>With international search report.</i>	
(71) Applicant: CORIXA CORPORATION [US/US]; Suite 200, 1124 Columbia Street, Seattle, WA 98104 (US).		(88) Date of publication of the international search report: 20 July 2000 (20.07.00)	
(72) Inventors: DILLON, Davin, Clifford; 21607 N.E. 24th Street, Redmond, WA 98053 (US). HARLOCKER, Susan, Louise; 6203 20th Avenue N.W., Seattle, WA 98107 (US). YUQIU, Jiang; 5001 South 232nd Street, Kent, WA 98032 (US). XU, Jiangchun; 15805 S.E. 43rd Place, Bellevue, WA 98006 (US). MITCHAM, Jennifer, Lynn; 16677 Northeast 88th Street, Redmond, WA 98052 (US).			

(54) Title: COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF PROSTATE CANCER

(57) Abstract

Compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer, are disclosed. Compositions may comprise one or more prostate tumor proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a prostate tumor protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as prostate cancer. Diagnostic methods based on detecting a prostate tumor protein, or mRNA encoding such a protein, in a sample are also provided.

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DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JS 99/15838

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 C12Q1/68 A61K39/395 G01N33/68
 G01N33/574 C07K16/30 C12N15/62 C12N5/02
 //A61P35/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97 33909 A (CORIXA CORP) 18 September 1997 (1997-09-18) the whole document	1-22, 29-31, 35-49, 53-79
A	--- SJOGREN H O: "Therapeutic immunization against cancer antigens using genetically engineered cells" IMMUNOTECHNOLOGY, vol. 3, no. 3, 1 October 1997 (1997-10-01), pages 161-172, XP004097000 ISSN: 1380-2933 the whole document --- -/-	23-28, 32-34, 53-57



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

31 January 2000

Date of mailing of the international search report

04.05.00

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
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 Fax: (+31-70) 340-3016

Authorized officer

ANDRES S.M.

INTERNATIONAL SEARCH REPORT

International Application No

PC1, JS 99/15838

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>CHU R S ET AL: "CPG OLIGODEOXYNUCLEOTIDES ACT AS ADJUVANTS THAT SWITCH ON T HELPER 1 (TH1) IMMUNITY" JOURNAL OF EXPERIMENTAL MEDICINE, vol. 186, no. 10, 1 November 1997 (1997-11-01), pages 1623-1631, XP002910130 ISSN: 0022-1007 the whole document</p>	14-20, 25-27, 41-47
A	<p>EP 0 317 141 A (BECTON DICKINSON CO) 24 May 1989 (1989-05-24) the whole document</p>	50-52
A	<p>ZITVOGEL L ET AL: "Eradication of established murine tumors using a novel cell-free vaccine: dendritic cell-derived exosomes" NATURE MEDICINE, vol. 4, no. 5, 1 May 1998 (1998-05-01), pages 594-600, XP002085387 ISSN: 1078-8956 cited in the application</p>	
P,X	<p>WO 98 37093 A (CORIXA CORP) 27 August 1998 (1998-08-27)</p>	1-15, 17-19, 21,22, 29-31, 34,35, 39-42, 44-46, 48,49, 58-79
P,X	<p>page 3, line 20 -page 22, line 2 page 35, line 9 - last line page 76, line 34 -page 78, line 22 claims</p> <p>WO 98 37418 A (CORIXA CORP) 27 August 1998 (1998-08-27)</p> <p>page 2 -page 24 example 2 page 35, line 15 -page 36, line 11 page 81, line 14 -page 83, line 11 claims</p>	1-15, 17-19, 21,22, 29-31, 34,35, 39-42, 44-46, 48,49, 58-79

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 99/ 15838

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Remark: Although claims 29-34, 48-49, 52, 55-57
are directed to a method of treatment of the human/animal
body, the search has been carried out and based on the alleged
effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such
an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all
searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment
of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report
covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is
restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-79 all partially

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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Invention 1. Claims: 1-79 (all partially)

A polypeptide comprising at least an immunogenic portion of a prostate tumor protein defined as SEQ ID 108 and which is encoded by the related SEQ IDs 2,3,107 (according to the Description of the Sequence Identifiers), fragments and variants thereof, fusion proteins comprising it, polynucleotides or oligonucleotides derived therefrom, antibodies or fragments thereof binding to the polypeptide, pharmaceutical compositions or vaccines comprising these products and their use in methods for inhibiting, monitoring or diagnosing the development of a prostate cancer, for removing tumor cells from a sample or for expanding and/or stimulating T-cells.

Inventions 2. to 439. Claims: 1-79 (all partially and as far as applicable)

As for subject 1. but concerning respectively SEQ IDs 1,4-106,109-111,115-171,173-175,177,179-305,307-315,326,328, 330,332-335,340-375,381,382 and 384-472.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT, JS 99/15838

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